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MAINTENANCE
EQUIPMENT



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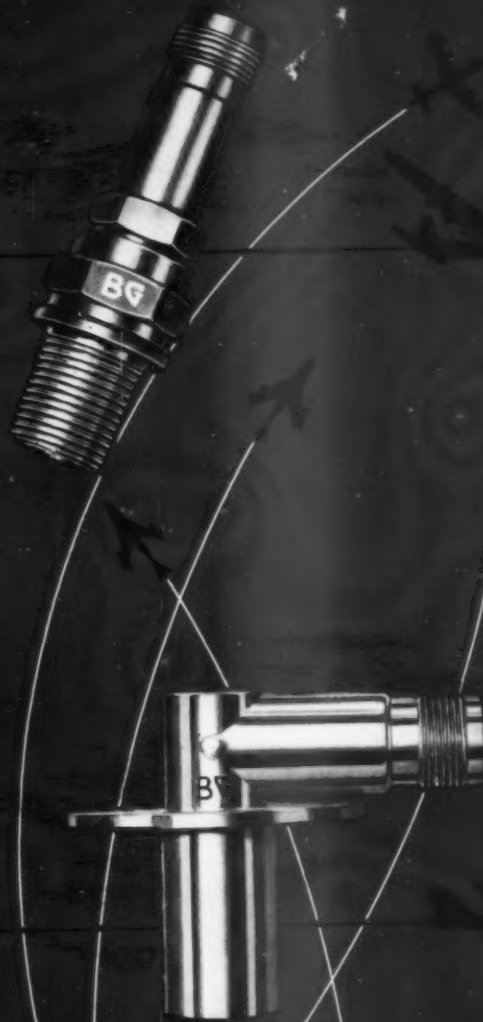
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AIRTRENDS

A program of user charges for the Federal Airways is being pushed by top Commerce Department officials with proposed legislation scheduled for completion by December 1. Accelerated program scuttles attempt of aviation industry to coordinate user charges for all types of transportation.

Cargo carriers were scheduled to get their first look at Lockheed's XC-130 last week as Lockheed and the USAF prepared to release photos and limited data on the four-engine turboprop transport at an early date.

Existing data on fuel refining capacity and production is inadequate as information on which to base supply forecasts, according to the Petroleum Administration for Defense, which is now circulating questionnaires attempting to correlate facts and trends.

Market for Douglas DC-4's, some of which are being made available as airlines get new equipment, continues to be a brisk one. Delta Air Lines reportedly sold a DC-4 to Northwest Airlines for \$650,000 recently, a near-record price.

Rumors of de Havilland Comet purchases by "North American" operators persist as the presence of many top U. S. airline officials in London for the Farnborough show aggravates the situation. Pan American, Eastern, and National are cited as actively interested.

Three times as much domestic air coach service is being offered by the scheduled domestic airlines as by all domestic non-scheduled operators combined, according to exhibits to be introduced in the non-sked investigation this month.

Despite reports of Martin 4-0-4 orders by foreign operators, and a Martin request to ACC for materials earlier in the year for future orders, Martin has no present intention of accepting new orders, since this would mean reactivating the line which has already produced 69 of the planned 103 aircraft.

Fast-growing corporate aircraft industry is credited with turning the tide for many fixed base operators who were hard hit by loss of USAF flight training activities and phase-out of GI flight program. FBO's are not in the dire straits predicted for them as a result of these reverses.

Convertiplane activity is moving ahead at a fast pace, with flight test of the McDonnell XL-25 reportedly scheduled for early next year. Sikorsky's S-57 convertiplane project is still active, but USAF has not yet given the craft an official designation.

Lockheed Aircraft Corporation's commercial transport backlog remains at about \$100,000,000 despite deliveries of 15 Super Constellations, 14 to Eastern Air Lines and one to TWA. Despite known dollar difficulties, 10 of the 13 airlines ordering Super Connies have been foreign.

The Washington View

Limousines are Interstate

A RECENT ruling by the U. S. Circuit Court of Appeals in Richmond, Va., that an airport limousine operator is engaged in interstate commerce, will probably serve as a precedent for any similar cases that arise in the future. If nothing else, it will cause other companies transporting passengers between airports and cities to see whether they are complying with Federal as well as state and local laws.

The Appellate Court decision was handed down in a case involving Airlines Transportation, Inc., which carries airline travelers between the cities of Durham and Raleigh, N. C., and the field serving the two cities. The Labor Department had contended that the transportation company was violating the Fair Labor Standards Act and had to prove Federal jurisdiction.

Both the U. S. District Court at Durham and the Appeals Court denied the firm's contention that its service was strictly intrastate, pointing out that the limousine ride constitutes part of the interstate airline trip.

Lovett Leaves at End of Year

Defense Secretary Robert A. Lovett confirmed at a press conference recently that he will resign at the end of the year regardless of the outcome of the Presidential election in November.

At the same time, he proposed that the new President appoint, immediately after the election, a new Defense Secretary to sit in on the defense budget preparations for fiscal 1954 so that he could be initiated in defense problems before he actually had to assume responsibility for the workings of the department. Lovett made it clear that he has no intention of remaining on in the defense post even for a limited transition period after the Presidential inauguration.

Defense Plants

Congress may be asked to give the Government permission to construct and operate certain types of defense plants when it reconvenes next January, but it is highly unlikely that any facilities for the construction of aircraft, engines and parts will be involved.

NPA-DPA Administrator Henry H. Fowler has indicated he is getting a little worried about certain aspects of the mobilization program, specifically various steel plants which would have little application to civilian production but which would be vital in case of war.

The DPA rapid tax write-off program, which permits companies to amortize the cost of new plants and equipment over five rather than 20-25 years for tax purposes, seems to be working quite well as far as the aircraft industry is concerned.

DPA set a mobilization goal of \$1,330,000,000 for the aircraft industry. In other words the agency is willing to grant certificates of necessity up to that amount to stimulate the building of new facilities and equipment for aircraft production. So far more than \$1.1 billion has been recommended by NPA's Aircraft Division and DPA has approved almost all of it.

It will therefore not be necessary for the Administration to seek the power to build certain types of plants. President Truman sought similar powers when the Defense Production Act was being considered, but Congress never approved any such recommendation.

The Government and Labor

There's new trouble brewing on the aircraft labor front, but any resulting walkouts will be over the same old issue—the union shop. If strikes do occur, however, President Truman will have the power to take over the aircraft plants to keep plane production going.

The AFL-Machinists are scheduling walkouts at Lockheed-Burbank (and possibly Marietta), Douglas-El Segundo, and Douglas-Santa Monica. All of those contracts have just expired and the IAM is set to make similar demands for compulsory union membership at Convair-San Diego.

Similarly, the CIO-Autoworkers have contract renewals coming up with Douglas-Long Beach (where a six-week strike took place last year and where the UAW is still smarting over its inability to win the union shop) and at Ryan Aeronautical in San Diego.

If any or all of these contract negotiations should result in strikes, the Government will undoubtedly get involved quickly. But it is not certain whether President Truman will attempt to compel the aircraft companies to yield (as he did in the steel case) or whether he will seize them and then sign a new contract granting the union shop.

There would be no question of the legality of seizure because the Selective Service Act provides for the Government taking over strike-bound plants to maintain essential defense production. The Chief Executive would not have to try to prove "inherent powers" as he unsuccessfully did when the steel mills were taken over.

... Robert M. Loebelson



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Turboprop Transport Progress Surges Ahead

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Industry Suffers 50% Labor Turnover

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other publications

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Official Airline Guide: Monthly publication of airline schedules and fares. Subscriptions: U. S. A. and countries belonging to the Pan American Postal Union, including Spain and the Philippines, \$11.00 one year, Canada, \$11.50. All other countries, \$12.50. Published from editorial offices at 139 North Clark St., Chicago 2 Ill. Central 6-5804. C. N. Johnson, managing editor.

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Letters

Letters should be addressed to The Editor, American Aviation Magazine, 1025 Vermont Ave., N.W., Washington 5, D. C. Anonymous letters will not be printed, but names will be withheld upon request.

"STRATOPORT" EXPERIENCE

To the Editor:

I was very interested in your article in the current issue of AMERICAN AVIATION (July 21) on Assen Jordanoff's proposal for uni-directional "Stratoports," for I once had some practical experience in landings under the lee of specially constructed wind-breaks.

In 1940 the Royal Air Force carried out some experiments on Salsbury Plain in the use of such wind-breaks—in this case a steel lattice structure a good deal higher than that proposed by Mr. Jordanoff. The idea was to use the device at airports like Gibraltar where only one runway was geographically possible. As far as I know the idea was dropped, but I did a considerable number of landings using this wind-break, under varying conditions of cross wind, and on aircraft ranging from single-engine trainers, through Hurricanes and Spitfires, to Hudsons and Bristol Beauforts at full load.

There was no question that the structure sheltered the actual touch down and landing area to a remarkable degree—although in a high wind there was a good deal of turbulence around the ends of the wind break, as there also was if one got too far down wind from it. The aircraft could be landed easily without drift from either direction, once in the "dead air" area, but some care and practice was required to make an accurate transition from the drift-approach to the no-drift flare-out and landing.

In order to make good a track which would be directly down the runway in anything like a cross wind the usual techniques were used, with the aircraft headed into the wind sufficiently to produce a constant track over the ground. But the moment the machine came under the lee of the structure the cross wind component was suddenly removed and immediate corrective action was needed to prevent the aircraft continuing on its heading—at a slightly increased air speed—and coming dangerously close to or even into collision with the wind-break itself. (Small aircraft could be side-slipped or skidded to counteract drift, and recovery to the runway center line was easier).

I left the unit concerned with this work shortly afterwards and came to the United States on flying duty, so I cannot say what the final decisions or techniques were on the project. I do believe however that there might be some practical flying aspects to Mr. Jordanoff's suggestion which would need further research. Under conditions of poor visibility and even a moderate cross wind they might perhaps render the runway unusable.

Incidentally the sudden acquisition of drift on take off—particularly on small aircraft—once the machine cleared the protecting screen, was quite startling. But there was sufficient room and height and speed available to control this.

CHRISTOPHER CLARKSON
New York 23, N. Y.

SHANNON'S CHAPEL

To The Editor:

The Airport Manager is away on holiday at the present but he would wish me to say that Mr. Riley has been misinformed about our church at Shannon. For the benefit of any of your readers who might be interested if they should ever come to Shannon, I should like it to go on record that the church here was intended and is used as a place of public worship. Apart from other occasions, two Masses are celebrated in it on every Sunday and Church Holyday.

If Mr. Riley should ever visit Shannon again, I should be very pleased to meet him and show him the church.

B. G. MURRAY

Shannon Airport
Ireland

(Art Riley, aviation editor of THE BOSTON GLOBE, had expressed the opinion (June 9 issue) that Shannon Airport's church is but a private chapel where the Catholic clergy may say Mass while enroute, whereas the new chapel at Logan International Airport, Boston, is a place of public worship. The above rebuttal from Shannon Airport apparently clinches that airport's claim of having the world's first airport chapel.—Ed.)

The turboprop is the M-028, rated at 8,190 equivalent shaft horsepower. It is now in small series production.

Wilkinson devotes 17 pages of his book to detailed specifications of Russian engines, both reciprocating and turbine type, a particularly important section in view of the lack of knowledge of Russian developments. But developments of other countries are not neglected; the book contains a wealth of detailed information on engine developments all over the world, a large portion of it not previously published.

The main body of the book is divided into four major sections. "The Jet Engines and Gas Turbines" section covers 132 pages, listing detailed specifications of 60 engines, 13 of which are new.

A section on "Jet Aircraft and Their Engines" contains tabulations on the U. S. Air Force, U. S. Navy, Great Britain and "other countries," listing all makes and models of aircraft with their engine types, power outputs and speed. Commercial aircraft are also included. This section covers five detailed pages.

The "Reciprocating Engines" section covers 138 pages and lists detailed specifications of 66 of the latest types, plus an introduction describing current activities in the piston engine field in the U. S., Great Britain, France, Italy, Spain and the U. S. S. R. Outstanding accessories are mentioned.

The miscellaneous final section consists of tabulations of aviation fuels and lubricants, completely revised to conform to the latest American and British specifications, and indices of the jet and reciprocating engine specifications.

SHIPS AND AIRCRAFT OF THE U.S. FLEET, 1952 SUPPLEMENT,

by James C. Fahey. The supplement is an eight-page illustrated insert carrying information on all new Navy ship and aircraft developments since publication of the Sixth Edition of "Ships and Aircraft." Published by Ships and Aircraft, 2033 Rhode Island Ave., N.E., Washington 18, D. C. Price, 50 cents for the separate supplement, \$2 postpaid for the basic volume with the supplement included.

Fahey's 1952 supplement is a concise round-up of the latest available data on Navy aircraft, containing quite a bit of hitherto unpublished information.

The supplement discloses the existence of a new military turboprop engine, the Pratt & Whitney T-48, being developed under Navy sponsorship. It also lists a number of other turboprops never before mentioned officially: the Westinghouse T-30, Pratt & Whitney T-32, Chrysler T-36, De Laval Steam Turbine Co.'s T-42, the Allison T-44, and the Fairchild T-46. All of the latter are either obsolete or cancelled.

Also included are photographs of 30 of the latest Navy aircraft, details of new aircraft carriers, and a section listing all of the new Navy plane types.

Books

AIRCRAFT ENGINES OF THE WORLD, 1952 EDITION, by Paul H. Wilkinson. 320 pages, illustrated. Published by Paul H. Wilkinson, 225 Varick Street, New York, N. Y. Price \$12, postpaid.

The Russians are concentrating turbine engine production on four major types and as a result of this policy are producing "plenty of up-to-date" jets, Wilkinson says in his preface, which gives a general outline of engine developments throughout the world.

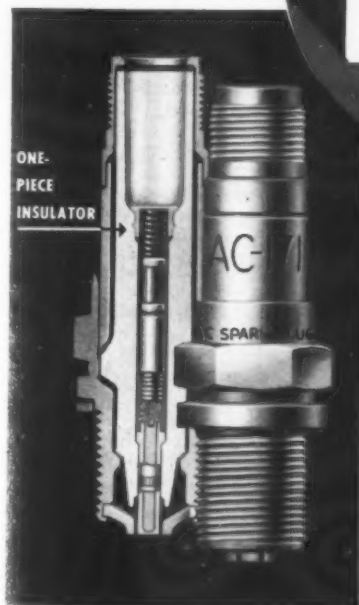
He identifies the turbines as three turbojets and one turboprop. The jets are the M-012, an axial flow type rated at 6,600 pounds thrust; the M-018, another axial originally rated at 7,700 pounds thrust but which is expected to be increased to 10,000 pounds in the near future; and the M-45, a centrifugal flow engine developed from the British Nene, which has a rating of 5,500 pounds. Afterburner versions of the M-012 and the M-45 are under development.

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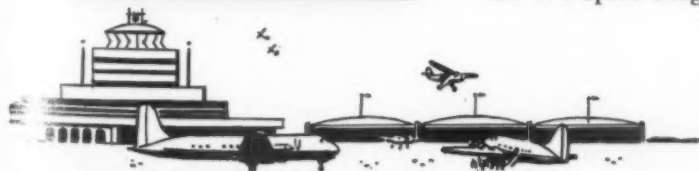
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Meet Your Editors

IT TOOK A LITTLE COAXING on the part of the photographer to get Anthony Vandyk to give us this grin. Perhaps our International Editor's original serious expression was due to the fact that he's recently over from Great Britain and is still trying to get used to the Washington humidity. London was never like this!



Vandyk

Van, however, does know what the score is as far as aviation writing is concerned, because he's been at it since he was 17.

His first introduction to the American aviation world came when he was a schoolboy (St. Paul's), back in 1938, when he was vacationing in the States. He flew from New York to California and back, and still holds very fond memories of that very "plush" DC-3 fourteen-seater flight. Later on, before schooling was completed, Van launched himself as a free lance aviation writer for some European newspapers and rode many press flights all over the continent.

When the war broke out, the Royal Air Force commissioned Van as its youngest officer. He spent six years in that famed outfit's intelligence service and wound up as Chief Intelligence Officer at the Central Fighter Establishment. All this gave Van an excellent opportunity to observe and learn a lot about aviation.

He did manage to continue to contribute occasional articles on the industry to the British daily papers and kept right up-to-date with all air transportation's rapidly moving developments. Van will admit to you that he read *AMERICAN AVIATION* whenever he could, after discovering it in the Science Museum's library. That was back in '39, two years after *AMERICAN AVIATION* began. The result of all this know-how was the delivery of a series of lectures on commercial aviation to RAF flight crews shortly before demobilization time.

Van's first post-war job was assisting in the editing of *Jane's All the World's Aircraft* reference work. This assignment completed, he left to become the English-language news editor of a Swiss aviation publishing company. Van's daughter Susan was consequently born in Geneva, Switzerland. It was there that Van finally met Wayne W. Parrish, *AMERICAN AVIATION*'s editor and publisher. The result was an invitation to join us, which Van accepted.

At this writing Van's family—wife May and Susan (age 2½)—are on their way over to join him and set up housekeeping around Washington. The entire family, incidentally, speaks French almost as fluently as English and Van now reports good progress with "Americanese."

When & Where

- Sept. 1-5—1952 International Symposium on Combustion, Mass. Institute of Technology, Cambridge, Mass.
- Sept. 4—Centennial of Engineering Banquet, Hotel Knickerbocker, Chicago.
- Sept. 5—National Conference on Industrial Hydraulics, Aircraft Session, Hotel Sherman, Chicago, sponsored by Illinois Inst. of Technology.
- Sept. 8-10—3rd National Standardization Conference, sponsored by American Standards Assn., Museum of Science & Industry, Chicago.
- Sept. 8-12—Instrument Society of America, 6th National Meeting, Cleveland, Ohio.
- Sept. 9-11—Air Transport Association, Meteorology Mtg., Curtiss Hotel, Minneapolis.
- Sept. 23-25—Air Transport Association, Engineering & Maintenance Conference, Saxony Hotel, Miami Beach, Fla.
- Sept. 26—Corporation Aircraft Owners Association, Annual Meeting Blackstone Hotel, Chicago.
- Sept. 29-Oct. 1—National Electronics Conference, Sheraton Hotel, Chicago.
- Sept. 30-Oct. 2—Aircraft Spark Plug & Ignition Conference, Champion Spark Plug Company, Toledo, Ohio.
- Oct. 1-4—Society of Automotive Engineers, National Aeronautic Meeting, Aircraft Engineering Display and Aircraft Production Forum, Statler Hotel, Los Angeles.

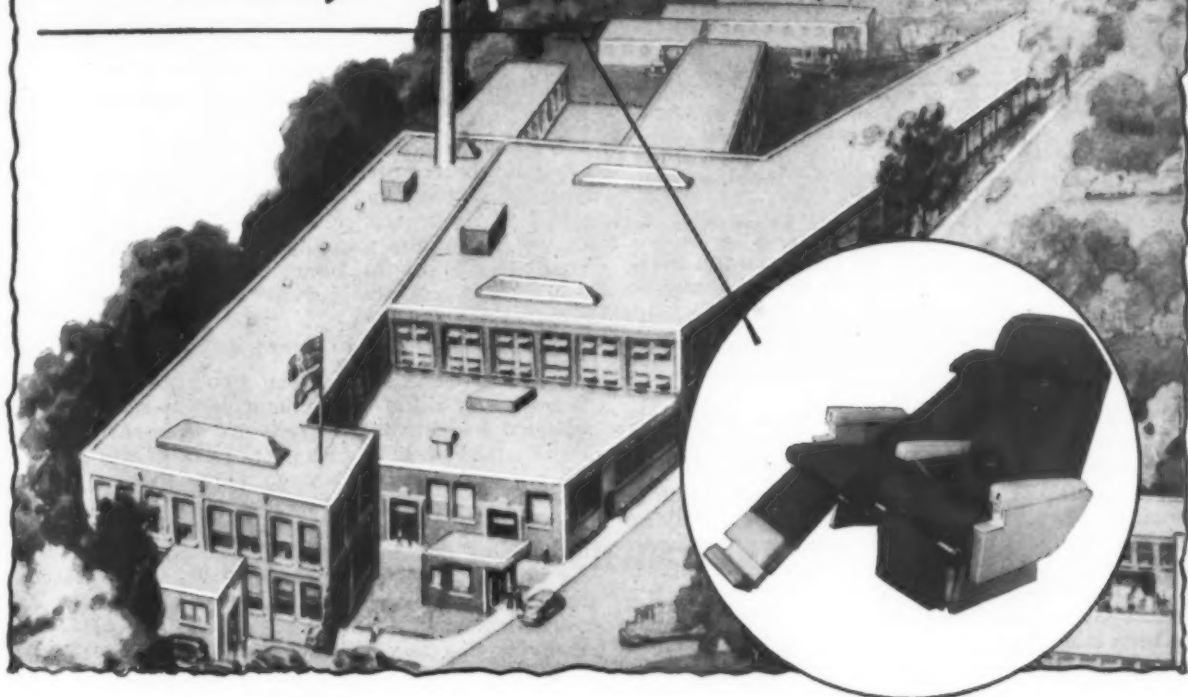
International

- Sept. 1-7—Society of British Aircraft Constructors, Annual Display, Farnborough, England.
- Sept. 15-19—IATA, Eighth Annual General Meeting, Geneva.
- Sept. 16—ICAO, Statistics Division (STA), 2nd Session, Montreal.
- Sept. 19—Conference of the Revision of Rome Convention (under auspices of ICAO), Rome.
- Sept. 19—IATA Traffic Committee, Geneva.
- Sept. 26-28—Aero. Medical Association, Interim Meeting, Paris.
- Oct. 21—IATA Traffic Conferences, Nice.

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Editorial

Interview With Eisenhower

A few weeks ago I had the privilege of a private interview with the Republican nominee for President, Dwight D. Eisenhower. This interview was then prepared as a special

report for American Aviation Daily. It is reprinted here in full in place of the usual editorial. Both The Associated Press and The United Press carried stories on the interview. At this moment of writing I am awaiting word from the headquarters of Gov. Adlai Stevenson, the Democratic nominee for President, and if an interview is

obtained, it will also appear in this magazine. Efforts for both interviews were initiated at the same time. The interviews are not for the purpose of plugging political candidates, but are attempts to find out what each knows and how each stands on aviation matters.

... WAYNE W. PARRISH

IF GENERAL EISENHOWER becomes President, all aviation will be in good hands. There will be a lot of changes—but they will be good ones.

Despite a very crowded schedule of appointments at his headquarters in the Brown Palace Hotel in Denver, the General gave me a private interview for a discussion of aviation problems. I left well impressed. It was the first time I had ever met the General and he lived up to everything that has been said about him.

The only restriction in the interview was that I could not use direct quotations. Nobody asked me in advance what I would ask him. He welcomed every question.

Air Power

The General is fully sold on air power, as is well known. He talks fluently and clearly about military aviation problems, as one might expect. On civil aviation, he isn't up to date on detailed problems and could hardly be expected to be. But his approach to those problems is the important thing—and his approach sounded good to this listener.

When the General was chief of staff, U. S. Army, 1945-1948, in the Pentagon, he didn't have the free hand he wanted. It is clear that his performance in those years gives no real criterion of what he will do if he becomes Commander-in-Chief and can have his way.

Pentagon

If he reaches his goal of being elected President, one thing seems certain—there will be a lot of new activity in the Pentagon. A re-evaluation of the Army-Navy-Air Force functions, especially the air functions, is in the cards.

The General fully realizes that the defense program has made the armed services the biggest

business in the world. He intends to use business-like methods in handling this gigantic organization of planning and procurement. He is not critical of top brass, but he believes competent and experienced businessmen and industrialists must be utilized to get the most out of the tax dollar.

Not only that, he is also fully cognizant of the fact that the Joint Chiefs of Staff is comprised of self-pleaders and needs outside appraisal and judgment on the requirements of the three major services. In the past, the Joint Chiefs of Staff has been a sort of gentlemen's club—he didn't express it quite that way, but the meaning was there—deciding on how to split up the funds available. The General would have objective outside analysis to offset the self-pleaders.

Economy

The General has been quoted a number of times on his belief that billions can be saved in the national budget, but he believes these savings can be obtained without losing one iota of fire power. They can be saved through elimination of waste and duplication. It is clear that the General is economy-minded to a great degree, but the news to aviation, especially, is that he wants very strong air power. He just happens to believe that we can have stronger air power and stronger defense for much less money, and this sentiment is shared by many in Congress and industry.

Unification

When it comes to unification, he repeated what he had said publicly on several occasions—that you can't have real unification of the armed services unless it comes from the heart. He knows as well as anyone, and better than most, how fierce are the service rivalries and that you can't eliminate these rivalries by decree or law. Whether he thinks that real unification can eventually be achieved I could not judge from his remarks, but it is clear that he feels much can be done by redefining functions and eliminating duplications, and achieving various areas of coordination through efficient planning.

The General mentioned that when he was in the Pentagon he wanted to retain a nationally-known management engineering firm to study the services and make recommendations for efficiency. This firm had been engaged by other government agencies in the past, but he didn't get his way. The inference was that if he becomes President, he will use the services of such outside consulting firms.

Balanced Air Power

In his remarks about air power came the idea that air power should be well balanced to meet any contingency. I asked him if he thought the Air Force



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BREEZE CORPORATIONS, INC., 41 S. Sixth St., Newark, N. J.

SEPTEMBER 1, 1952



has tended to neglect the building up of air lift (transport, cargo, etc.) and he said he didn't think so, that since Korea the emphasis had to be placed on combat types and some other phases of air power had to wait until the combat types were delivered to meet current needs. In other words, he didn't go along with the use of the word "neglect," feeling that the Air Force had no choice at the time.

Industry Finances

I asked the General if he was aware that the prime aircraft manufacturers were being penalized tax-wise and that some of them had had net returns after taxes of only 1% and 2% in the past few years, in contrast to much higher returns of vendors to the aircraft manufacturers, and he expressed considerable surprise at the low rate of return.

The discussion then switched to research and development by the aircraft industry, and the fact that such research depended greatly on what the companies had left after taxes and that if the present trend continued, privately initiated research could just about dry up in a few years from now. It was clear that the General favors very strong research programs in industry and believes research should be kept in private industry, but stimulated and made possible by government. The General's proposed institution of businesslike methods and supervision of the defense program would cover the current restricted profit situations in the aircraft field.

It was hardly surprising that the General was unaware specifically of the current financial situation in the industry, but this is a subject in which he is much interested and in which he unquestionably will aid in finding a solution.

Rotation of Officers

Asked whether he thought the system of rotation of top officers in the Air Force which placed men experienced in the field into highly specialized commands, such as procurement and research and the like, in which they have had no training, was a factor in inefficiency and waste, the General answered indirectly by referring to his plan to bring business and industrial leaders into the military picture to analyze and recommend more efficient methods. (Some top industry leaders believe the rotation system is one of the major defects of the current defense program.)

Civil Aviation

Turning to civil aviation problems, it was not expected that the General was up to date or had had time to formulate any policies. As a matter of fact it was a relief to know that he is not approaching civil aviation problems with any preconceived ideas, nor has he committed himself to any factions or interests.

The General's whole philosophy on problems of state rests in gathering around him experts in various fields and studying all sides to all problems. He is not going to make any snap judgments of his own. Such a policy is as much as anyone could ask for, especially in a field as complex as aviation.

The General is aware of the British lead in jet transports, although only in a general sense. It is much too early for him to have detailed opinions on what the U. S. should do, but he did express the opinion that it was a job for private industry.

He whistled when I mentioned that a prototype jet project would run between \$30 and \$40 million. It is clear that the General doesn't favor Federal subsidy for anything if subsidy can possibly be avoided, yet it is also clear that the General would assume some leadership in trying to get something done on an important matter like jet transports.

CAA

I asked the General whether he would favor re-establishing the Civil Aeronautics Authority as an independent agency, since the law is still on the statute books, but he didn't want to commit himself on such administrative matters at this time. He is of the opinion that there are far too many separate government agencies now, and it is unlikely he would favor the CAA as an independent agency unless a study revealed that such a move would be the exception rather than the rule.

I pointed out that at the present time there is no one agency in government looking out for the over-all interests of civil aviation. He listened to my comments and questions with interest, but he isn't ready, of course, to come forth with specific recommendations and policies along these lines.

Airports and Non-skeds

Two other questions, one on expansion of Federal aid to airports on a matching-fund basis with municipalities, and the other on the role of non-scheduled operators in air service, were too detailed for the General to answer, but he did mention the subject of air safety and how important he thinks that activity is.

Approach to Problems

There has been some criticism of General Eisenhower for not having pat answers to every question asked of him. Such criticism is shortsighted, for the only way he could have pat answers is to have had some politico provide them for rubber-stamp use.

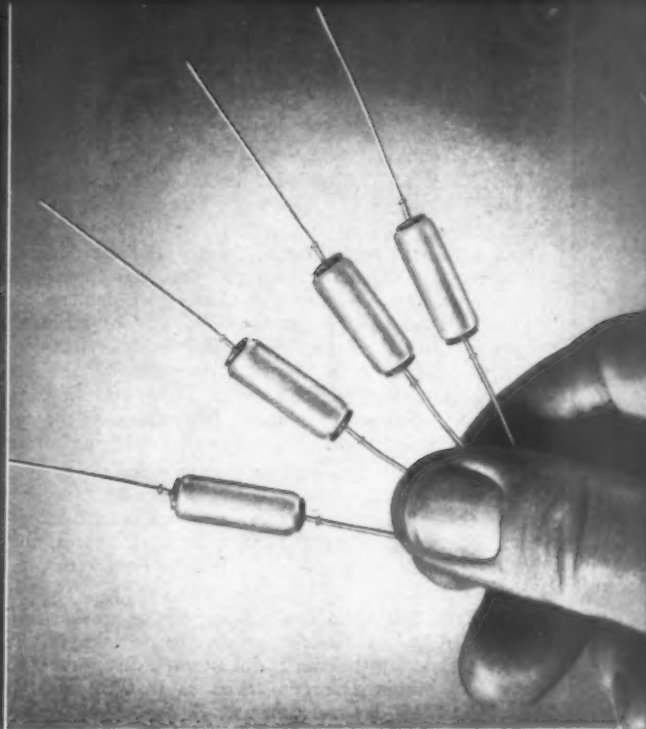
One corporation executive who was in Denver at the time answered the criticism this way: "My company is relatively small and I've been head of it for over twenty years and I don't pretend to know or have all the answers about my company. The mark of a good executive is to surround himself with men who do know the answers in their respective specialized fields."

This makes a lot of sense. My impression of the General's approach to aviation problems is good. He knows what he's talking about on the military side, but he's going to surround himself, if elected, with men who know or can find the detailed answers. On civil aviation, which is just one of a thousand or so activities of government, he'll find the people who can study and analyze and come up with the answers. With all the facts at hand, he'll then make decisions.

The net conclusion of the interview is that aviation will come out well ahead if General Eisenhower is elected, although he'll make plenty of changes. But the chances are that the changes will be constructive and will aid, not hamper, private industry. A lot of frills that have been paid for out of Federal funds will be chopped off, but the basic aviation needs will get studied attention.

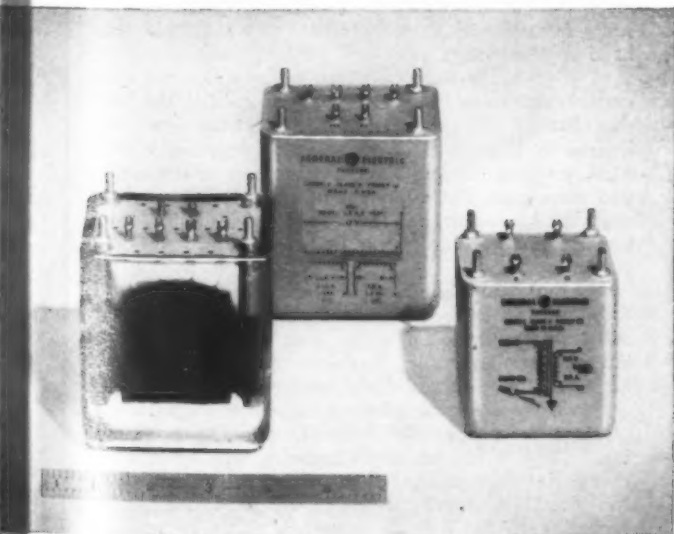


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Rough Weather Ahead for 'Off-Shore' Procurement

THERE IS A NEW HASSEL in the aircraft industry, one which has not yet been aired publicly but which is likely to erupt at any time into a full scale argument between the industry and the administrators of the mutual security program. The hassel concerns the aviation phase of "off-shore procurement."

Off-shore procurement is a program administered by the Mutual Security Agency. It consists of financing aircraft production in European countries by providing money from the North Atlantic Treaty Organization pool for tooling and production facilities. As is the custom, the bulk of the money provided is in Yankee dollars.

The plane types to be built have not yet been decided, but they are to be "the best available" for the defense of Western Europe; in other words, they might include planes of U. S., British, French or other NATO design.

The idea has a twofold purpose: to provide additional sources of airplane production for the NATO arsenal, and at the same time to build up the productivity of our European allies so that they can be ready for "M"-day assignments.

Practically everyone agrees that it is a good idea to strengthen the NATO forces with this added plane productivity. But the aircraft industry is something less than enthusiastic about the way the MSA planners are going about it.

There are a number of items about which the aircraft industry is mumbling under its collective breath. To cite an example, there is the question of licensing agreements. A number of American aircraft manufacturers have licensees in Europe building aircraft, components or parts, with exclusive patent rights and technical assistance agreements with the American companies. To date, the MSA planners have not given any indication that they are aware of such licenses.

A number of American companies have already been asked for sets of blueprints of a given plane or part and told only that they are to be used in the MSA program. Here is a point which concerns U. S. manufacturers:

Suppose Company A, an American company, has a licensing agreement with Company B, a foreign company, to build a particular airplane. Company C, another foreign company, is given a set of blueprints for the same plane by MSA and asked for cost estimates. Since Company C is being set up in business by American money, conceivably its estimates would be lower than those of Company B, which used its own money to get started. So the MSA group assigns production of the plane to Company C, putting it in competition with the original licensee.

This, American manufacturers feel, might have a three-way rebounding effect: 1) the American company might be liable to a lawsuit for having violated a license agreement, however unwillingly; 2) the American manufacturer's product built by the new, MSA-assigned company, which has no previous experience with that product, might be of inferior quality, resulting in an indirect loss of prestige to the American company; 3) the production problems the new licensee is certain to encounter will probably result in higher ultimate costs of the product.

Another point is that MSA, which is apparently willing to spray American dollars all over Europe, is very tight-fisted when it comes to doling them out to American manufacturers. There is every indication that MSA will not pay licensing fees to American firms. Thus, Company A might find three separate European companies building its airplane, requiring continuing technical assistance, and tying up a lot of trained personnel—without a dime in return.

Still another point that bothers the U. S. industry is the question of allowable profits. It is a well known fact that the American aircraft industry is one of the most poorly paid in the world; the profits allowed it on military contracts might well be termed "coolie pay." The European aircraft industry, however, operates on a much higher profit margin; its low production volume requires that.

Now, there is every indication (we say indication because it is practically impossible to find out anything definite about MSA) that the MSA planners will permit European manufacturers to continue at the rate of profit to which they have become accustomed, and perhaps even give them a rate to which they would like to become accustomed, in order to further the end of European productivity. This, quite understandably, rankles in the bosom of America's aircraft industry.

American Dollar

But perhaps the most important point is a long-range one—the fact that we will use American dollars to build up competition for our aircraft industry, particularly in the commercial field. The U. S. industry, currently faced with the jet transport crisis, could hardly be expected to applaud a program whereby its tax money is turned over to foreign manufacturers to strengthen them to the point where they may "bite the hand that fed them."

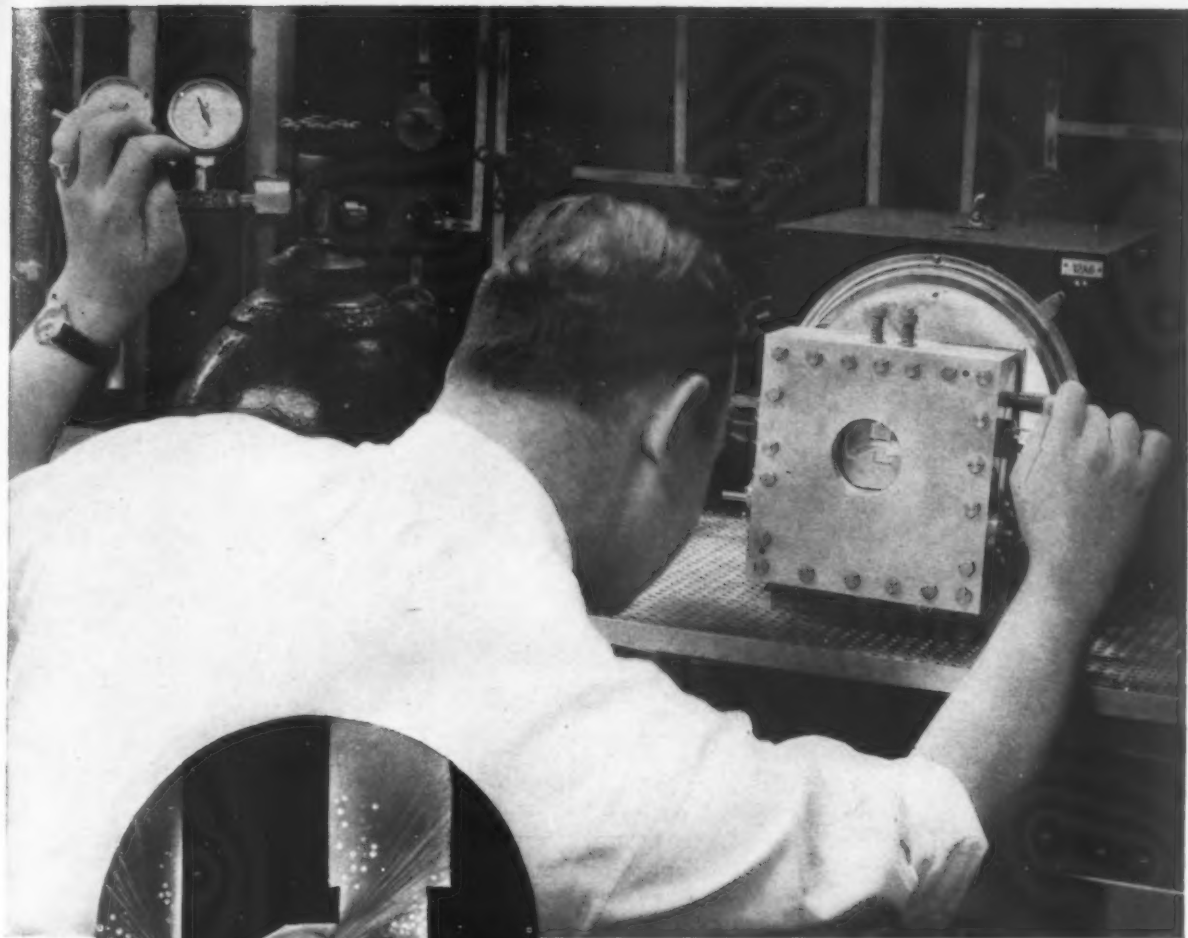
One of the more optimistic points about Britain's current leadership in the jet transport field is the fact that British lack of mass-production know-how has limited its sales potential to a certain degree. But the MSA program aims to develop European mass-production techniques. For military production, of course; but once the know-how has been developed and the labor force acquired, it can readily be diverted to commercial production.

European plane costs now are considerably lower than ours; in large-scale production, they may become still lower, to the point where, even if we should gain jet transport leadership, European manufacturers may be able to price us out of the market.

There are some who even question the value of off-shore procurement. With the U. S. industry operating at only a fraction of its capacity, why bring new sources into the picture? The proponents of this view feel that U. S. capacity should be utilized to the hilt in providing NATO with air power and that the European plants should be assigned production of spare parts only. This, however, is an extremist view, since it defeats the aim of European productivity on "M"-day.

In any even, it appears almost certain that MSA will encounter some strong arguments before its off-shore procurement program develops much further.

... JAMES J. HAGGERTY.



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15

B.F. Goodrich



How B. F. Goodrich makes it hot for ice

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On radio masts, it keeps ice from forming and causing them to snap off in the wind.

On elevator horns, it keeps them from freezing tight, insures easy control.

B. F. Goodrich electric rubber is also used on wings, hydraulic lines, water tanks, spinner domes, jet intake doors and many other airplane parts. It's a typical development of BFG's engineering and research for aviation. Other B. F. Goodrich aviation products include tires, wheels and brakes; De-Icers; Pressure Sealing Zippers; Avtrim; inflatable seals; Plastilock adhesives; fuel cells; Rivnuts; accessories. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

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BRISTOL BRITANNIA airliner shown during its 30-minute flight on August 16.

Turboprop Transport Progress Surges Ahead

Maiden flight of Britannia, launching of Saunders-Roe "Princess," orders for Viscount make news.

By ANTHONY VANDYK

TURBOPROP-POWERED aircraft were in the news late last month as the Bristol Britannia, the world's largest propeller-turbine airliner, made its first flight, the king-sized Saunders-Roe SR/45 Princess flying-boat was launched, orders for the Vickers Viscount continued to grow, and the aviation world heard preliminary, unofficial details of a "Super Viscount."

In the shadow of the recent de Havilland Comet operations and accomplishments, the role of the turboprop-powered transport has been very much in the background of late. In this country growing concern over the commercial availability of the turboprop engine, as contrasted with the turbojets,

has promoted a distant attitude towards this type of aircraft.

The Britannia will change all this. It is not an experimental effort, a prototype that may or may not see service. British Overseas Airways Corp. has 25 of these aircraft on order. Probably no other plane in this stage of development has attracted so much attention from both military and commercial operators in recent times.

Military Interest

The military interest is highlighted by the unofficial but accurate report that Canadair Ltd. is now negotiating with the Bristol Aeroplane Company to build the Britannia under license for the Royal Canadian Air Force.

RCAF officials are in England this month looking over the aircraft and studying early performance data with an eye toward adopting the plane for reconnaissance duties. It is reported that they plan on installing Wright R-3350 Turbo Compound engines in the Britannia airframe to provide the operating range required for this work.

The projected Canadian production program has the blessing of the British government as a means of dispersing production, a major factor in current defense planning. The Royal Air Force is also believed to be eyeing the Britannia, but more with a view to transport use than reconnaissance purposes.

There is considerable commercial importance in the Canadair Britannia project, for it will put into production on the North American continent a plane which already seems to have a good chance of invading the U.S. and Canadian markets.



ARTIST'S conception of the ten-engine Saunders Roe SR/45 Princess flying boat.

The Britannia has some interesting aspects which might well attract U.S. operators. In particular, the 12-foot cabin cross-section makes possible coach arrangements meeting the acknowledged needs of some U.S. carriers. Bristol has proposed arrangements with six-abreast seating providing up to 104 passengers in coach operations.

BOAC has earmarked the Britannia for coach operations on routes where the Comet is the first-class aircraft. With its long range the Britannia should be able to fly schedules not too much slower than the Comet's, the high speed of which is counteracted by less favorable range. The turboprop transport can carry its full payload of 25,000 pounds over a still-air range of 3,175 miles with a take-off weight of 130,000 pounds. If take-off weight is boosted to 140,000 pounds, the 25,000-pound payload can be carried over 4,000 miles.

The unusual performance of the Britannia coupled with the possibility of the plane's production in Canada may well influence Trans-Canada Air Lines' choice of equipment. TCA has long stated its interest in the turboprop as an interim stage in the introduction of jet transports. The company has been following turboprop developments in Britain with great attention and has been assessing the Vickers Viscount's suitability for operation over the TCA domestic system.

While the Britannia and the Princess are just reaching the stage where they attract widespread publicity to the

turboprop-powered aircraft, the Viscount is perhaps even more newsworthy: the first production model is scheduled for October delivery to British European Airways, more than 50 of the planes have been ordered, and another 50 are covered by advanced negotiations. First scheduled service with this plane will probably be in early spring by BEA.

Viscount progress has been steady. It is now on order by Aer Lingus, Air France, BEA, and Trans-Australia Airlines. Its selection as standard equipment for India's domestic operators seems assured. Invasion by the Viscount of the other two continents—Africa and America—would seem to be only a matter of time.

Super Viscount

Meanwhile Vickers is not content to rest on its laurels, but is reported to be forging ahead with a "Super Viscount" project accommodating 60 passengers. The new model would have a longer fuselage than the present Viscount and would need a more powerful engine than the Rolls-Royce Dart; the Napier Naiad has been mentioned as a possible powerplant.

Both Viscounts are essentially medium aircraft, whereas the Britannia is in the Douglas DC-7/Lockheed Super Constellation class. The Saunders-Roe Princess is a very different proposition and can best be likened to the Martin Mars.

Originally designed as a "flying luxury hotel" for 100 passengers, the 140-ton flying boat has a still-air range

of 5,000 miles and a cruising speed of over 300 mph. The original interior layout has been abandoned as the Princess is now an RAF instead of a commercial project. As a high-density troop transport the ten-engine flying boat with its 315,000 pounds gross weight could carry a payload of 40,000 pounds.

Although powered by the same engine as the Britannia—the Bristol Proteus—the Princess must now be regarded as a purely experimental project in view of current military and commercial disinterest in the flying boat. It will, however, enable Saunders-Roe to gain experience in jet techniques which will be of great value if the company decides to go ahead with its Duchess turbojet project (a swept-wing flying boat with six de Havilland Ghost engines enabling it to cruise at 500 mph at 40,000 feet with 74 passengers).

The Britannia, Princess, and Viscount have proved that the turboprop is a factor to be reckoned with in planning re-equipment programs. It remains to be seen if the world's airlines decide that the path to the turbojet area should pass by way of the propeller-turbine.

More DC-6A's for Canada

Canadian Pacific Air Lines has two Douglas DC-6A Liftmasters on order, as well as a fourth DC-6B. All three aircraft will be delivered late in the summer of 1953, or early in the fall of that year. CPA is also scheduled to receive two DC-6B's in December of 1952, and a third next January.

Fairchild, Fokker Meet To Discuss F-27 License

The U.S. license for the Fokker F-27 "Douglas DC-3 replacement" was the main subject of recent talks in the Netherlands between representatives of Fairchild Engine and Airplane Corp. and the Fokker Aircraft Company. Previously Fokker had Boeing Airplane Company interested in the U.S. license rights for the high-wing, local service transport, but this deal was not finalized.

The Dutch company is believed to be also in contact with other interests in both North and South America (Fokker is known to be willing to establish a manufacturing subsidiary in Brazil) and has therefore divulged little information on its overseas plans. It has merely confirmed that Fairchild has obtained the Fokker jet S-14 trainer license rights, pointing out at the same time that the U.S. company would not build the Dutch plane until a USAF contract had been obtained (the S-14 differs considerably—notably in size—from the USAF's jet trainer specification).

Similar secrecy surrounds the F-27, although it has been disclosed that the twin-engine transport will gross 31,000 pounds and will be offered with three alternative types of powerplant (two with turboprops, one with piston engines).

PAL, Mexico Near Accord On Mexico City Stop

Philippine Air Lines is reported close to signing an agreement with the Mexican Government for a route from the present terminal at San Francisco to Mexico City and on to Europe via the Guest Airways certificate. Plan is to effect a complete round-the-world service by PAL.

No application for a PAL route from San Francisco to Mexico City has been received in Washington, but such would be expected following any formal signing with the Mexicans. Mexican sources say that the PAL agreement will be effective October 1.

Meanwhile, about 60 million pesos have been subscribed in Mexico for a new airline which would absorb a number of present companies and reportedly PAL would take an interest in this company. Carrier probably would seek to operate to one or more U.S. points although the venture is separate from PAL's efforts to develop a round-the-

world through Mexico.

PAL is known to have had discussions for purchase of Aerovias Guest, which now operates between Mexico City and Miami, although PAL would undoubtedly re-activate the original Guest certificate which extended to Madrid.

Janas Reduces Holdings; Still Holds Option

Sigmund Janas, Sr., former Colonial Airlines president, has reduced his holdings in Colonial to a "token number of shares," but still holds a management-challenged option to purchase 80,000 shares, if he decides to buy back in. Making public a personal letter to another Colonial stockholder last week, Janas said he sold 42,200 shares last May and June, with 26,200 going to Laurance Rockefeller, an Eastern Air Lines director.

The other 16,000 shares were sold to the Flumen Corporation, Janas said, disclosing that most of the stock sold Rockefeller was at a negotiated price of \$10.50 a share. Price for the other shares was not named.

For Janas, unless he exercises the

option, the sale could be his "swan song" as far as Colonial is concerned. He headed the company through its formative years but ran into serious difficulties in 1951 when CAB unleashed charges which ultimately resulted in his ouster as president, numerous court proceedings, and a requirement that he pay the company \$75,000 in "restitution." Eventually, he resigned as a director.

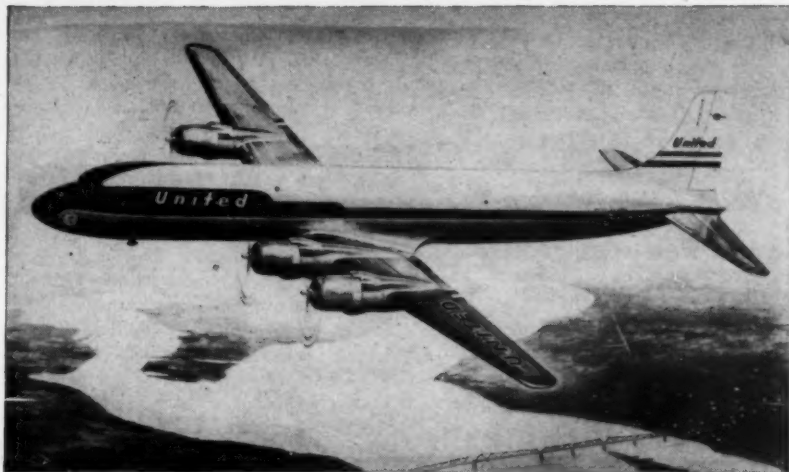
But even as late as April, 1952, Janas' name was associated with major events affecting Colonial. He was linked to an opposition stockholders group which successfully upset Colonial's plans for a merger with National Airlines. He publicly supported merging the company with Eastern and just six weeks ago Colonial and Eastern signed a merger agreement.

Whether Janas will, if legally possible, exercise his option for the 80,000 shares is problematical. In announcing the sale of his 42,200 shares last week, he indicated he has no intention of changing his status as a small stockholder.

Colonial's management claims the option agreement is void and has a case pending in court in which it seeks to bear out its position.



The candidate meets air transport leaders. General Eisenhower, left, met recently with Robert F. Six, center, president of Continental Air Lines, and Stuart G. Tipton, right, general counsel of the Air Transport Association. The meeting, devoted to a discussion of policies and problems of commercial aviation, followed by 10 days Eisenhower's interview with Wayne W. Parrish, editor and publisher of *AMERICAN AVIATION* (see page 10).



DOUGLAS DC-7's ordered by United Air Lines are long-range versions having maximum gross take-off weight of 122,200 pounds. Artist's view, above.

Close-up Reveals DC-7 Design Changes

Refrigeration system, improved landing gear are among features setting it off from the DC-6.

By FRED S. HUNTER

NEW DESIGN features and changes in the DC-7 make it for all practical purposes a new airplane, although it is part of the DC-6 series. Douglas engineers estimate the ratio of difference between the DC-6 and the DC-7 to be approximately the same as that between the DC-4 and the DC-6.

Notable among the many changes is a Douglas-designed Freon refrigeration system which may be used for a second, or auxiliary, cooling system. It is in addition to the DC-7's regular air conditioning and provides clean, dry air to the cabin independent of cabin pressurization. To keep the cabin cool on the ground, the system can be operated from normal electrical supply without using the airplane's engines.

Weight Penalty

The application of Freon exacts a weight penalty, coming to approximately 500 pounds total, but Douglas decided on it to insure dependability and to provide a type of cooling best equipped to overcome extreme highs either in temperature or humidity.

Moreover, a substantial portion of the weight is due to the system's removability. It can be taken out for winter operations and put back in for the hotter summer months.

A master change optional with the carriers, the Freon cooling system has been ordered by three DC-7 purchasers: American, Delta, and National.

Various other improvements being incorporated into the DC-7 include an improved landing gear design by which the main gear can be used effectively as a speed brake. It can be lowered at air speeds up to 410 mph at 20,000 feet ($V_1 = 300$ mph). By contrast, 200 mph is the maximum speed at which the landing gear of the DC-6 should be lowered.

Higher Longer

By using the main gear for a speed brake, it will be possible to remain at high altitude for a longer time, and then to descend at a higher rate without danger of exceeding placard speeds. Placard dive speed of the DC-7 is Mach .585 (410 mph at 22,000 feet). Present placard level flight speed is Mach .52 (361 mph at 24,500 feet).

Douglas will also introduce a new carburetor air scoop for better anti-icing in the DC-7. This scoop features an alternate air intake for use during most icing conditions. The alternate air intake has all the advantages of an under-cowl scoop plus excellent ram recovery characteristics.

Only during the most severe icing, Douglas says, would carburetor heat be needed. Douglas, incidentally, calls this a carburetor air scoop because of common usage of the term to describe such scoops. The Wright R-3350 Turbo Compounds, which will power the DC-7's, employ fuel injection and use a master chamber.

Included in new DC-7 features previously announced is the use of titanium

structure and skin in the aft nacelles. In addition to high strength at high temperatures, titanium affects a saving of approximately 200 pounds in weight per airplane.

Still another new feature of the DC-7 will be an auxiliary exit door of floor height in the lounge in the tail. It will be on the opposite side of the cabin from the passenger entrance door. In order to install it at floor height, Douglas reduces the number of lounge seats from six in the DC-6B to five in the DC-7.

The Douglas company has settled on a configuration of 64 passengers (instead of the 60 originally announced), plus five lounge seats for the standard de luxe version of the DC-7. This includes an eight-seat forward compartment similar to that of the present DC-6B. Baggage and cargo space totals 641 cubic feet.

As in the DC-6B, an alternate interior substitutes cargo space for seats in the forward compartment, thus reducing passenger capacity to 56 and increasing total cargo volume to 1,145 cubic feet.

Order Coincidence

A coincidence of the American and United DC-7 orders is that these two major purchasers have reversed their thinking on configuration. American, which puts cargo in the forward compartments of its DC-6B's, has ordered DC-7's with seats forward; United, which has the eight seats in its DC-6B's, has ordered the configuration for extra cargo forward for its DC-7's.

United also is ordering the 122,200-pound, long range version of the DC-7, whereas American's will have a maximum gross takeoff weight of 116,800 pounds. The latter, however, may be converted.

Since the first announcement of the DC-7 Douglas has accomplished several improvements in engineering the airplane. Maximum landing weight has been increased from 95,000 pounds to 97,000 pounds, and a similar gain has been made in the zero fuel weight, which rose from 88,250 pounds to 90,250 pounds.

Douglas Backlog High

Douglas Aircraft now has the highest officially announced backlog in the industry, reporting a total of \$2.1 billion in unfilled orders. About 13% of the Douglas backlog is for commercial transports, including 58 DC-7's and 118 DC-6's. The remaining 87% is military work, including the C-124 and Boeing B-47 for the Air Force and the AD Skyraider, F3D all-weather fighter, and F4D Skyray interceptor for the Navy.

Latest Details on DC-7

Weights

Maximum takeoff weight	122,200 pounds
Maximum landing weight	97,000 pounds
Maximum zero fuel weight	90,250 pounds
Operators weight empty	69,626 pounds (domestic dayplane)
	71,025 pounds (overwater dayplane)
Manufacturers weight empty	66,176 pounds (domestic dayplane)
	66,826 pounds (overwater dayplane)

Capacity payload

17,795 pounds

Fuel capacity

5,512 pounds

Level flight speed

Gross weights (pounds)

	95,000	105,000	122,200
With maximum continuous power	410 mph	404 mph	393 mph
Altitude	22,000 ft.	22,100 ft.	21,550 ft.
With maximum cruising power	370 mph	356 mph	327 mph
Altitude	24,500 ft.	24,200 ft.	21,550 ft.

Stalling speed

Landing configuration at sea level	99 mph
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Rate of climb and ceiling

4-engine max. R/C at sea level	1,810 fpm	1,535 fpm	1,155 fpm
4-engine max. R/C at 20,000 ft.	1,030 fpm	800 fpm	480 fpm
Altitude at which 4-engine R/C=6Vso	23,400 ft.	21,700 ft.	17,800 ft.
Altitude at which 3-engine R/C=.04Vso2	20,800 ft.	18,200 ft.	7,100 ft.

Takeoff with T.O. power

CAA field length at sea level	3,400 ft.	4,400 ft.	6,380 ft.
CAA field length at 5,000 ft.	4,350 ft.	5,750 ft.	*

* Maximum permissible T.O. weight with T.O. power, wing flap setting 20°, at 5,000 feet is 116,000 pounds. The corresponding field length is 7,250 feet.

Operational Predictions

Increased payload, greater range, faster speed, and lower operating costs for the DC-7 powered by Wright R-3350 compound engines are cited by the Douglas Aircraft Co. in the following examples for scheduled airline operation:

From	To	Distance Statute Miles	Normal Cruise Speed—mph	Block Time Hrs:Min.	Payload Pounds	Dollars Per Mile	Cents Per 200- Pound Mile
Vancouver ..	Edmonton ...	636	364	2:07	17,795	1.04	1.17
Chicago	New York ...	724	364	2:23	17,795	1.02	1.15
New Orleans ..	Mexico City ..	912	363	2:55	17,225	1.112	1.30
New York ..	Miami	1100	363	3:25	17,795	0.95	1.07
Dallas	New York	1381	361	4:12	17,795	0.93	1.05
Belem	Rio de Janeiro	1608	360	4:55	17,225	1.05	1.22
Los Angeles ..	Chicago	1751	360	5:17	17,795	0.92	1.03
Edmonton ...	Montreal	1838	359	5:31	17,795	0.91	1.02
Recife	Dakar	1986	358	6:00	17,225	1.04	1.20
Gander	London	2344	356	7:09	17,225	1.03	1.20
Los Angeles ..	Honolulu ...	2607	354	7:48	17,225	1.03	1.20
New York ..	Shannon	3072	353	8:48	17,225	0.97	1.13

The following assumptions were used in compiling the foregoing figures:

- * Maximum cruise power at 23,500 feet cruise altitude was used for all ranges.
- * Crew
 - (a) Domestic flight crew—5
 - (b) Overwater flight crew—6
- * Maneuver time and fuel computed as 15 minutes (0.25 hours) at continued cruise in accordance with standard ATA practices.
- * The block time is the sum of the climb time, cruise time and maneuver time with no advantage taken for descents.
- * Three hour reserve fuel for all flights.
- * Zero wind conditions were assumed on all flights except from New York to Shannon where the time was based on prevailing eastbound summer wind data.
- * Full oil carried on all flights.
- * Direct costs were based on the cost formula developed by the ATA. Fuel cost used was 20¢ per U.S. gallon on domestic flights and 25¢ per U.S. gallon for overwater flights.

Non-Skeds Plan Merger Pending CAB Ruling

Agreement to merge three non-scheduled airlines and four affiliated organizations in the event one of the non-skeds is successful in CAB's Large Irregular Carrier Investigation has been filed with the Board for approval. Carriers involved are North American Airlines, formerly Twentieth Century Airlines; Trans National Air Lines, formerly Alaska Southern; and Trans American Airways.

Affiliated organizations are:

- North American Air Coach System, a ticket agency.

- Republic Air Coach System, a partnership made up of Jack B. Lewin, James Fischgrund and Stanley D. Weiss, which furnishes ground facilities and personnel for each of the airlines and also performs "all accounting and book-keeping services" for the three lines.

- California Aircraft Co., a "joint venture" in which Fischgrund, Lewin, Weiss and Maury Swidler participate and which leases aircraft to the non-skeds.

- Twentieth Century Aircraft Co., also a joint venture involving Fischgrund, Weiss and Lewin and which also leases aircraft to the non-skeds.

Merging parties told CAB their plan is in order "because many of the problems which have faced the Board arising out of large irregular carrier operations would be solved if there were somewhat fewer large irregular carriers, each or most of them being somewhat larger, and financially more sound, than many of them have been in the past."

Surviving corporation would be North American Airlines, no matter which of the three airlines might get authorization from CAB to continue.

Travel Agents Must Take 6% Until Spring

Travel agents selling trans-Atlantic air tourist space will have to be content with a 6% commission until next spring, instead of the 7½% received for standard-fare sales. This was the ruling of the Civil Aeronautics Board which approved a resolution of the International Air Transport Association providing the lower commission for tourist sales.

American Society of Travel Agents had protested the resolution and was successful to the extent of securing an examiner's recommendation that the agency fee cut be disallowed. But CAB saw no severe hardships for the agents this year at the lower commission. However, it approved the resolution only through March 31, 1953.

Interview

with

RALPH S. DAMON

**President
Trans World Airlines**

★

A Look at Airline Economic Health

★ ★ ★

Ralph S. Damon: President of Trans World Airlines, Damon is a rare combination of top executive, engineer, and operations expert. In more than 30 years in the aviation industry, Damon, 55, served as a military pilot during World War I, was factory superintendent and later vice president and general manager of Curtiss-Wright's Airplane Manufacturing Company plant in St. Louis, president of Republic Aviation Corp. early in World War II, and later president of American Airlines.

Since taking over the presidency of Trans World Airlines in 1949, Damon has done much to strengthen the role of the U. S. in international airline operations and to improve TWA's position within the domestic and international industry as a whole.

Few men in the aviation industry have the "common touch" which seems to come naturally to Damon. He has met and remembers a large cross section of the employees in each of the companies with which he has been associated. A prolific letter writer, Damon manages to keep in touch with many of them. People who have not seen Damon in years are apt to get letters of congratulations on new appointments, birthday greetings, and other messages from this busy executive.

In addition to his TWA duties, Damon is a director of the National Safety Council, the Commerce and Industry Association of New York, and the New York Convention and Visitors Bureau. He is on the Boards of Veeder-Root, Inc., the Goodyear Tire and Rubber Company, the New York Trust Company, and the Garden City Bank and Trust Company. He is also president of the board of trustees of Clarkson College of Technology, N. Y.

Q. Several recent airline stock issues have had discouraging histories. Do you feel the failure of these issues has any long range significance?

A. I question whether the failure of the recent airline stock issues has long range significance. Most of the issues were put out at a time when the market was not very enthusiastic about stocks in general and perhaps about airlines in particular. If there is any long range significance I think it is the fact that the airline industry, now approximately a quarter of a century old, is losing its glamour and becoming more of a business.

Q. TWA recently issued new stock. How was this received?

A. The new stock offered by TWA was, I think, received extremely well. Price and market conditions for it had to be determined substantially in advance due to the fact that it was the desire of the directors to offer it to the existing stockholders, whether they had pre-emptive rights or not. The issue was underwritten by the controlling stockholder. Immediately after the price had been announced the market took a slump and actually the underwriting price to the stockholders was never below the market. It was either equal to or above the market. Despite that fact, 58% of the minority stock was subscribed, leaving only 42% to be absorbed by the underwriting stockholder and that actually raised his percentage of ownership from 73% and a fraction to 74% and a fraction.

Q. Do you see the airline financing needs as leveling off now that the big re-equipment program appears to be leveling out?

A. I question the accuracy of the assumption that the re-equipment program is leveling off. The airline equipment program has been one of pretty steady acquisition since the middle of the depression. In every year in which the airlines could buy equipment they have bought very substantial amounts, right up to the start of World War II. Towards the end of World War II, they again started contracting for equipment to be delivered immediately thereafter, and they haven't stopped yet. I would guess that as much equipment will be ordered in 1952 and probably in 1953 as was ordered in 1951. On that basis, airline financing needs are definitely not leveling out.

Q. Do you feel the airlines are being lulled into a false sense of security by high load factors and high aircraft utilization?

A. Yes, both the airlines and the CAB are being lulled falsely by present high load factors and high utilization. In my opinion a ten per cent reduction in load factor would throw every airline in the U. S., including TWA, into the red. A ten per cent reduction in utilization might have a lesser effect because the managements would try very hard to remove the poorest earning flights, but frequently those flights are associated with points which are an obligation of the franchise.

Q. What are the most significant parameters to watch in gauging the economic health of an airline?

A. The most sensitive factor in determining how much an airline is making from day to day is the load factor. You can almost translate that figure into profits or losses at the end of the month, after taking into consideration unusual factors such as non-recurring items. The next factor, which is definitely secondary to the load factor, is utilization and operating performance.

'... opposed to determining rates on allocated costs'

The most critical factor, and perhaps the over-all answer to all of them, is the operating ratio. I think earnings on investment may be distorted in many ways in a rapidly growing industry. Once the industry matures I think the economic health of a particular company can be better determined by operating ratio than by return on investment.

Q. Have spiraling operating costs already passed the point where the airlines should be getting higher rates per passenger-mile?

A. Yes, definitely, and I think as soon as CAB's statistical section catches up with the situation they will be impressed with the fact also. We are not going to have a better airline industry without "meat on our bones." The airline industry acquired pretty full-fledged regulation very early in its life. Therefore, it is like Chinese women's feet, bound up at an early age. The railroads had something like 50 years to develop without an ICC, and at least 75 years before they were as completely regulated as the airlines at the end of about 25 years.

Painless Way

Q. Do you have any figures now which would indicate about how much of an increase you would need?

A. No, I don't. It will depend a great deal on how the load factors and utilization of equipment stand up with respect to the market. Removal of the five per cent round trip discount would have been a relatively painless way of raising fares without impairing passenger volume and I am sorry that it was disallowed. I suspect the time will come when that and perhaps other increases will have to be put into effect.

Q. What is your attitude on CAB's recent subsidy separation bill for international operations?

A. I have never agreed that the "cost" method could apply to determination of what is compensation. No other type of common carrier is subject to that type of rate determination. Basically, I am opposed to attempting to determine rates on allocated costs, for domestic or international airline operators. It is not done for any other form of common carrier and I don't think it should be done for us.

Q. What effect do you think the new UPU rate will have on TWA's revenues?

A. The new rate will reduce the return substantially.

Q. Do you feel there is any critical relationship between the UPU mail rate as proposed and the subsidy service rates established by CAB in its subsidy separation?

A. I think it is inconceivable that the U. S. should pay a foreign flag airline with lower labor rates, and perhaps with equipment given to it under some form of American foreign aid, more money per ton-mile for carrying U. S. mail than they pay to an American company paying American labor rates and purchasing its equipment for its own dollars. That's exactly what this subsidy separation does though.

Q. How do you feel about the differential in mail rates awarded to TWA and PAA?

A. I feel very bitterly that it was a very unfair allocation. I don't understand how any one can justify paying one company almost 13 millions and another only 3 and a half per year for about the same service. Two orders came out on the same day, one on TWA's trans-Atlantic rate and one on Pan American's Latin American Division rate, both of them determining break-even rates. In the TWA decision, CAB stated that it was the carrier's responsibility to find funds if the break-even rate was not sufficient, and CAB would assume no obligation. In the Pan American decision, CAB stated that the Board must take into consideration the carrier's obligation to raise funds. This latter was a far better order. I think TWA should be allowed to come under the concept of the latter order.

Q. How does TWA look on PAA's efforts to obtain domestic routes?

A. Pan American should be treated just like any other applicant for domestic routes. The rules as I understand them depend on fitness, willingness and ability of the applicant and upon the necessity for the service offered, either directly or in competition with already existing services. Another consideration is the preservation of a truly balanced competition. It would probably not be in the public interest to take any carrier, and I mention no names, and make it so overwhelmingly big that the competitors would be unable to compete adequately with it.

Q. What do you see as the most immediate promise of CAB's recent action in approving a permanent trans-Atlantic route certificate for TWA?

A. The most immediate promise of CAB's recent action in approving TWA's trans-Atlantic route on a permanent basis was the fulfillment of the U. S. national policy of competition for U. S. flag international airlines. Up to that time, all certificates granted across the ocean to all carriers except Pan American had been granted on a strictly temporary basis and gave foreign carriers and governments the impression that, while we were giving lip service to competition, we were really planning a national monopoly airline.

East of Bombay

Q. What do you see as TWA's next route goal in the international field?

A. The renewal of our certificates east of Bombay with amendment to terminate in Tokyo, and the granting of permanent certificates for all the points to which we are currently certificated on a seven-year basis.

Q. Several airline presidents have expressed their views on the probable timetable of jet transport activity by this country. Would you add yours?

A. Three years ago I said that it looked to me as though it would be seven to 10 years before non-piston driven engines would be in general use—other than token

'... can't put Queen Mary ... on Staten Island runs'

or experimental usage. Three years have now gone by, leaving between four and seven years. That's still just about right.

Q. It would appear that TWA will soon be meeting Comet competition on some of its routes, yet TWA seems to have given less serious consideration to the whole turbine transport situation than many other lines.

A. That assumption is due to the fact that we have not done a lot of broadcasting. I think TWA has spent fully as much time and effort and study on both turboprops and jets as any other airline but we have not been anxious to make premature publicity releases saying that turboprops or jets are right around the corner.

In 1950 I had a ride in one of the early Comets. In 1951 most of our TWA board of directors took a ride in a Comet. We have been in contact with A. V. Roe in Canada about the Jetliner and we have had engineering talks with de Havilland in England. We have also had engineering-management conferences with all the major equipment manufacturers in the U. S. indicating an interest in this product, but we have been reluctant to make any premature releases.

Compound Engine

Q. TWA has not ordered the compound engine version of the Super Constellation yet. Is this significant?

A. No. At the time we placed our last order it looked to us as though we didn't need to take the greater complication of the compound engine immediately, and of course it is ultimately available. We had some qualms then as to the amount of growing pains it would have.

Q. There appears to be some difference of opinion about the virtues of converting piston-engine aircraft to turboprop engines in the future.

A. I think TWA's attitude is one of being fully open-minded. We have made provision in our latest Constellations and in our 4-0-4's for conversion. Most of the protagonists of non-conversion—the antagonists of conversion—happen to be manufacturers or airlines equipped with products which would suffer far more by conversion than some others, and so have relatively little choice. We think we have quite substantial choice and are going to preserve an open position until we can clarify it fully.

Q. For some time there have been rumors that TWA wants to buy NWA's Stratocruisers. What is the basis for these reports and what is there to them?

A. That rumor was first given to me two or three years ago. There is no basis for it.

Q. Will the Martin 4-0-4 meet all of TWA's short-haul requirements or does TWA still need a DC-3 replacement?

A. We are hoping and planning that the Martin will take care of all TWA's short-haul requirements. If a DC-3 replacement could be developed we might consider it for more frequent service on some particularly light sectors but it seems to me that a DC-3 replacement is an economic myth at this time.

Q. It would appear that the Martin company's financial troubles plus termination of the 4-0-4 line puts TWA in a poor position for increasing its twin-engine fleet.

A. TWA is in good shape with respect to Martin airplanes. We ordered 30 originally and supplemented it with an additional order for 10. We then purchased 12 2-0-2A's when an option for up to 19 more 4-0-4's was cancelled. I guess there are half a dozen airplane types which have been built and delivered in the last dozen

years which are no longer in production. If that turns out to be the case of the 4-0-4, which I hope it won't be, we will live through it.

Q. American Airlines' president, C. R. Smith, recently said that American had ordered its last twin-engine equipment, on the basis that the four-engine plane is more efficient. What is your attitude?

A. I think that is more likely to be true in the future than it has in the past because of air navigation problems. The four-engine airplane carries more passengers but only takes up the same air room. On dense routes that is going to be an important factor. But you can go broke fast by putting a Queen Mary of the Air on Staten Island ferry schedules. You have to temper that statement with some related facts.

Q. Would you comment on the Government's reluctance to grant rapid tax write-offs on the new transports for the airlines?

A. I think the tax write-offs should be allowed for current aircraft purchases. The whole purpose of tax write-offs is to encourage people to buy added plant—in the case of airlines that means airplanes—for national defense. With accelerated tax write-offs you earn less, you pay less taxes, and you can presumably utilize that cash to buy more airplanes which you otherwise couldn't have afforded to buy.

National Defense

Q. Is the Government giving the airline role in national defense sufficient weight?

A. I don't think it is and I think it is very fundamental that it should. Government agencies are not interested in the airlines earning money enough to adequately provide equipment and facilities for the national defense. The military seem more interested in integrating men and material as casualties into the national defense than taking them as organizations where they can work most effectively. They still have a long way to go in recognizing what the airlines can do for national defense.

Q. Do you feel the airline mobilization program offered by the Defense Air Transportation Administration is a sound effort to best utilize the airlines in time of emergency?

A. I think the DATA effort is the best that has been developed so far and, except for the allocation of equipment between the airlines, I would say it has been as constructive as any effort to date.

Q. Would you comment on the present trend toward mergers between trunk airlines and the relative merits of mergers compared with equipment interchanges?

A. I think that some mergers may be worthwhile, but I would think that the public would be much better served in the long run by preserving the benefits of competition—which means better service and striving of effort—with interchanges than with mergers, and we have applied that philosophy in TWA. We have no mergers pending at this moment but we have applied for a number of interchanges.

Q. Do you feel the merger program will be accelerated or do you think resistance by stockholders and other vested interests will curtail such proposals?

A. About four out of five mergers fall by the wayside. Mergers which have been proposed have fallen down through lack of Board approval, stockholders' approval, and by the parties just falling "out of love." I

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'...public better served by benefits of competition.'

don't think a much higher percentage will go through in the future than have gone through in the past.

Q. Should CAB force mergers?

A. No, that would lead to monopoly.

Q. What are your findings regarding coach-type operations?

A. TWA has always been enthusiastic about domestic sky tourist flights. Our present ten trips a day have about as high a load factor and probably higher than any other trips. Domestically we look forward to continuing to expand the sky tourist market. Internationally, we have only had sky tourist type operation for three months, three very good high-season months. I think we should reserve judgment on international operations until we have seen what happens in the slack season. International sky tourist seems to have opened up a substantial travel market, but whether the market can be accommodated at the present price, I don't know.

Major Expansion

Q. Do you agree with the general feeling now that major expansion will be via coach service?

A. I think we are going to see a heavier expansion, percentage-wise in domestic sky tourist markets than in first-class markets. The first-class market has been growing 20 years, and the sky tourist market has been going only four or five.

Q. What is the most important finding regarding institution of coach services?

A. Domestically, I would say the most important finding is that it has not proved harmful to first-class business. Whether that is due to the very high economic barometer of the country and what it will do when this economic barometer falls I don't know, but I would say that the worst fears I had of diversion from first-class traffic have not proven true.

Q. The U. S. share of all trans-Atlantic traffic has fallen off sharply in recent years. Do you see any hope of reversing this trend?

A. Of course, I can't speak for the other U. S. flag carriers, but in the face of increased competition TWA's share of the trans-Atlantic traffic has grown. We think that is a result of good service and salesmanship, and we intend to keep it up.

Q. Should the U. S. be more restrictive in its granting of operating rights into our major cities by foreign carriers?

A. No. The only time the U. S. should exercise such rights, in my opinion, should be defensively in order to obtain equivalent rights for our carriers in other countries.

Q. The certificated U. S. airlines' percentage of total trans-Atlantic cargo appears to be steadily declining. What is the reason for this and what do you see as air freight's future?

A. Actually, last year TWA flew approximately 30 million ton-miles of cargo, that is air express and air freight domestically, and air cargo internationally (we don't differentiate between express and freight on international service). That figure does not include mail.

TWA was the first to operate trans-Atlantic all-cargo scheduled service. During the past two years we have been hampered by the necessity of furnishing equipment to the Korean lift, and the attitude of the CAB, which refused to acknowledge the validity of cargo services for mail rate purposes, has not been encouraging. Nevertheless we are re-instituting scheduled trans-Atlantic all-cargo

service on September 5, and we will give a good account of ourselves.

Q. Are the non-skeds presenting much of a problem?

A. The non-skeds, without obligation to serve anything but the cream traffic, will always be a problem to scheduled airlines with common carrier obligations. I think Congress and the CAB are going to have to make up their minds whether the air transport industry is going to be built for cream-skimming or for franchise obligations. At the present time a franchise is very much a one-way street. It has obligations to serve while a non-sked can come in, parallel long hauls anywhere, and take the cream off the traffic with no other obligations. We should remember as regards non-skeds that they have no obligations whatever to develop air transport equipment, the core of the industry's growth. They will take yesterday's planes for today's business at any point in time. The scheduled airlines work on tomorrow's airplanes with today's money.

Q. What effect do you feel the recent advancements in surface transportation equipment (new plush train service, S. S. United States, etc.) will have on airline business?

A. I still think that all they are going to do is slow down the trend to all long-haul by air. They can't stop it and I think their ultimate use is going to be for sightseeing purposes rather than transportation. That is true of the S. S. United States. It's a wonderful boat and if you want a four-day rest cure I can't think of a better way to take it, but if you want to go to Europe to do some business you can go, do your business, and come back before you would get there in the first place by boat.

Comparable Trains

Q. Isn't it true that many of the profitable routes, such as Boston-New York, are short-haul routes where trains give comparable service?

A. Yes, that is true. You are getting to the question of what's the minimum air haul. I doubt whether in the future people will elect to go by air unless they can save a minimum of an hour. Boston-New York is 4 hours by fastest train and you can go by air in an hour and a quarter, with about the same amount of time added traveling to and from the air terminals. That's a total of two and a half hours, so Boston-New York is a good air haul unless you want to take time to see more scenery.

Q. What do you think about the recent 23% increase in rail pullman berth rates?

A. That's the best break the airlines have had in a long time.

Q. What improvements in present scheduled airline service do you think would be most appreciated by passengers and shippers?

A. I think the most important things to do today for passengers are to expedite reservations information and service, expedite baggage handling both on boarding the airplane and on the ground, and provide more accurate incoming flight information to passengers' friends waiting for them, particularly when flights are off schedule. In the case of shippers, more prompt information with respect to shipments, particularly when tracing shipments.

This is primarily a problem of training employees in the importance of courtesy and the fact that our bread and butter comes from passengers and shippers. Carry-on baggage should also be encouraged, and not only on Convairs and Martins where baggage racks are provided. Passengers ought to be encouraged to carry bags small enough to fit under Constellation and DC-6 seats. I do carry such a bag and can live out of it for a week.

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Jet prototype: TWA favors CAB proposal to Congress

Q. What is your attitude on a joint industry public relations campaign by the airlines?

A. I am very much for a joint industry public relations program. I don't think the airlines are doing as much as they should, although I think they're doing a great deal more than they are telling the public now.

Q. Do you see airline regularity and safety as major factors in controlling the size of the scheduled airline market today?

A. Absolutely. I think people have given up the desire for travel by air because of the glamour of air. People who go in for air transportation are not going in for "air" but for "transportation." It must be regular.

All forms of ground transportation are irregular. icy roads affect buses and automobiles; wash-outs on bridges, frozen switches, derailments, and power plant failures affect railroads. Storms delay ships. A great deal of ground transportation is not more than 99% regular and air transportation is in the high 90's.

Q. Would you comment on the Doolittle Report recommendation for improved emergency training of crews and suggestion for use of flight simulators on a cooperative basis?

A. We have had negotiations with both Link and Curtiss-Wright looking towards either a fixed installation at a point like New York or Chicago, where a lot of airlines could use it, or on a mobile truck where it could be taken to all pilot pools, not only on our airline but maybe others as well. There has been no decision yet because the cost of the unit is quite tremendous and all training devices have some limitations.

Two-and-Three

Q. Has the two-and-three seating on long-haul trans-Atlantic coach service been satisfactory?

A. I think some passengers complain that it is a tight fit. On the other hand, most people, if they realize that they are saving approximately \$125 in twelve hours, will probably criticize the seating but they will still want to save \$125.

Q. Would you comment on the role of IATA, the job it is doing, and where it might be falling short of its goals?

A. I think IATA has done a wonderful job. It has probably been the outstanding international agency promoting understanding, harmony, travel, and trade among the free nations. It has a long and tough road to go. Almost every country is not only sovereign unto itself but proud of its own particular regulations. In attempting to smooth the way of the international traveler IATA has done a great deal to date but a great deal more can be done.

With air transportation now taking more people in and out of the United States than boats, and with air transportation taking about a third of the passages across the Atlantic, and still growing, IATA has a tremendous opportunity and obligation to smooth the way of these travelers.

Q. Do you consider the Air Transport Association walk-out by Eastern as serious? What do you see as the long range effects of this action?

A. Yes, I think it is a very serious matter because if there is going to be a trade association it obviously must have the support of all major elements. I have great respect for Capt. Rickenbacker and for his problems and I hope the matter can be composed.

Q. Do you have any thoughts on how the ATA organization could be improved?

A. The best way to improve ATA would be to have the leaders in the industry produce more cooperation when industry issues are at stake.

Q. What is your attitude towards the role of the local service airlines in the country's over-all transport picture?

A. In the past two or three years I have changed my opinion and today I think that if the local service airlines continue the way they have been going, and if the route pattern is allowed to grow slowly and logically, and not to warp the mail payments ratio unduly, that they will provide a very fine service to many communities which could not otherwise have the benefits of air service.

In the past few months I have made three flights on local service airlines—All American, Frontier, and Robinson (Mohawk)—as a passenger, and each of them saved me very substantial time over ground transportation. The service was good, it was well conducted, and I found that they were contributing substantial revenues, through connections, to trunk airlines.

There is no question but that their mail payments are relatively high compared to their other revenues, and I don't know how much that can be reduced.

Q. What is your attitude on user charges for the Federal airways facilities?

A. My attitude is that the Federal airways facilities should be provided to the users in the same way that harbors, lighthouses, channels, and other waterway improvements are for ships—in other words, without charge. That's a personal opinion.

Q. There appears to have been a leveling off in airline achievements towards all-weather operations. What is holding it up?

A. I think that the so-called leveling off in all-weather operating has actually been a maturing period in the realm of safety. The next step in this direction is activation by the Air Navigation Development Board of a uniform system of traffic control and airway aids for the military and civilian operation in the zone of the interior United States and suitable for civilian operation in other parts of the world.

One of the things that has been holding this up has been the lack of appropriations for CAA. There are many airports today which would have lower safe limits if provided with ILS, GCA, approach lights of the latest type, etc.—and that means money.

Q. TWA has either a financial or a management interest in various foreign airlines. Can you give the current percentage or extent of these various interests?

A. These are all in the public records. TWA provides technical services to the governments of Saudi Arabia and Ethiopia, but has no financial participation in their airlines. We have a 40% stock interest in LAI, about 14% in TAE, and about 5% in Philippine Air Lines, but do not control any of them.

Q. Has internal trouble in Egypt and other parts of the Middle East caused any particular concern or problems for TWA?

A. Some concern, which proved ill founded. Our relations with the present regime are excellent.

Q. What is your attitude toward the need for a prototype development program on the part of the U. S. Government to help overtake the British lead?

A. There is certainly a need for some action, and TWA favors generally the legislation which the CAB has proposed to Congress.

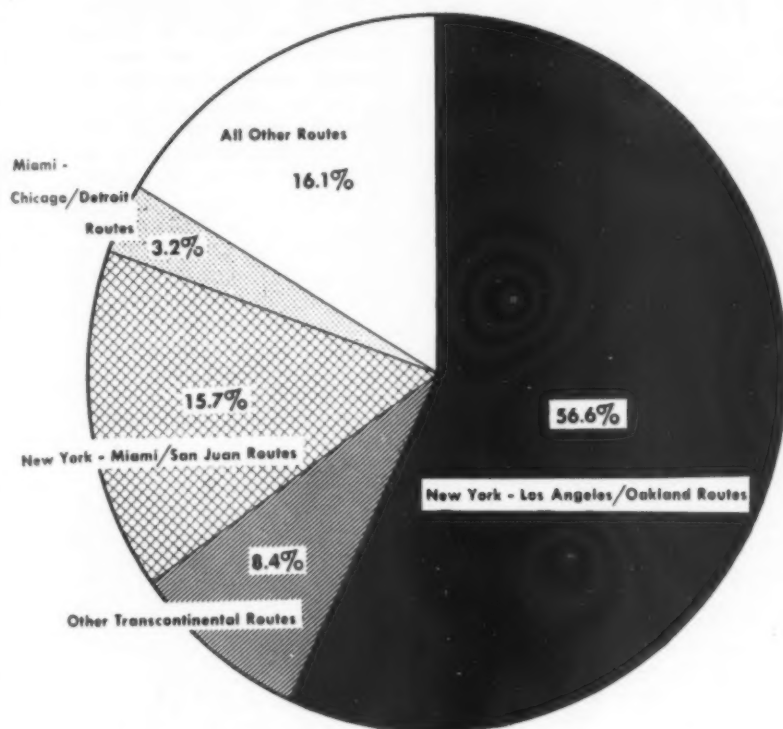
Domestic Operations Analysis

Summary All Irregular Carriers

(Third Quarter 1951)

Showing Concentration of Through Plane Operations on Transcontinental, High Density Routes

SEAT MILES



roads. They believe only Government-regulated certificated transport companies should be authorized, or the overall transport network of this country will suffer.

For the non-skeds, although some of them doubt the validity of the hearings, it will be their official "day in court" long clamored for publicly before the courts and before Congressional bodies. It is, in effect, CAB's answer to the so-called "Sparkman Report," in which the Democratic vice-presidential nominee, and the Senate Small Business Committee he headed at the time, sharply criticized CAB's handling of the non-sked problem.

The investigation does not contemplate issuance of certificates for scheduled services. This was decided in the Transcontinental Coach-Type Service Case, in which CAB found there was no need for additional certificated lines even for specialized coach operations.

But the investigation does embrace the possible issuance of certificates or exemptions for limited or controlled operations. Then non-scheduled lines hope to get CAB authorization to set up coach systems throughout the country.

On the other hand, several non-sked leaders intend to rely on strength through numbers. Mergers of various small companies into one relatively strong organization is contemplated as a means of survival.

Non-Sked Problem: To Be or Not To Be

Greatest economic case CAB has ever tackled may run two years and reshape the industry.

By WILLIAM V. HENZLEY

THE MOST ENORMOUS economic proceeding in CAB history gets underway in Washington on September 3, when hearings begin on one of the most perplexing problems ever encountered by commercial aviation—what place in the air transport picture, if any, should be occupied by the non-scheduled airlines.

So enormous is the proceeding, officially termed an investigation, that Washington is only the first of four sites at which presentations will be made. Later, Miami, Los Angeles, and Seattle will be the scenes of continued hearings.

There are 66 non-sked applicants involved in the proceeding, all seeking certificates or exemptions to conduct limited route-type services. There are 29 other parties of record, some being organizations or joint groups listed under one name but comprised of many

members, such as the common carrier railroads whose number totals well over 100. The Civil Aeronautics Board, Commerce and Post Office Departments, and better business bureaus from around the country will participate.

With this setting, a complex array of issues will be argued for eventual determination by CAB. Foremost among these, is the policy question of whether or not there is a need for services by large irregular carriers in addition to and supplemental to services of certificated carriers.

Of noted significance will be the presentations of the common carrier railroads of this country, who claim they feel the impact of non-scheduled airline services on their business. The great network of scheduled air coach services, developed to a large degree because of low-fare non-sked competition in lush markets, has had its effect on the rail-

Who's Who

IN THE FOREGROUND of the non-sked fight will be O. Roy Chalk of Trans Caribbean Airways; Amos E. Heacock, of Air Transport Associates and head of the non-sked trade group Aircoach Transport Association, and Stanley D. Weiss, James Fischgrund, and Jack B. Lewin of North American Air Coach.

Spearheading CAB's air operations bureau's case will be Ronald H. Cohen, a last-minute replacement for Louis Goodkind, who, up to his appointment to the State Department, was a moving force in the Board's handling of the non-sked problem. Brunt of the scheduled line's opposition will be carried by the "Big Four" and Pan American.

Trans - Atlantic Coaches Hailed as Success

Early reports indicate low fares boosted traffic, though lines disagree about how much.

By WAYNE W. PARRISH

LOW-FARE trans-Atlantic tourist service which began May 1 has been a success. So say officials of eight out of nine Atlantic carriers responding to an AMERICAN AVIATION survey.

All agree that it is too early for final judgment. Several believe business would have been capacity without low fares. Most agree that low fares created a substantial amount of new business. It is also apparent that no other new service has ever received the close scrutiny which this one is getting. Passenger reactions and comments have been watched closely by all carriers.

Tourist fares for next summer seem definitely assured. Better equipment will be offered then by some carriers. The fare structure, meal service and other features will be discussed in detail at the next Traffic Conference of the International Air Transport Association in Nice, France, October 21.

Next Phase

The next phase of tourist service will also be watched closely. It starts November 1 when lower fares for the winter season ending April 30, 1953 begin.

No airline reported unfavorable comments by passengers to the 3-and-2 abreast seating, although one airline said it sets up a seating plan in advance to permit passengers traveling together to sit together and avoids three strangers sitting in the trio of seats. El Al, Israel Airlines, is the only carrier providing 2-and-2 abreast seating of tourist fares and considers itself to be in a favorable position in this regard.

Most carriers reported they would not recommend any major changes at the IATA Conference. Air France said it believed there should be a still greater fare differential between tourist and first class. Scandinavian Airlines System thinks the winter fare season should start September 1 instead of November 1. Sabena, the Belgian airline, says the problem needs study and changes. Some airlines are withholding opinions on the fare structure until studies for the full summer season are completed.

Most enthusiastic report was made by Willis Lipscomb, vice president of traffic and sales for Pan American World Airways, who said tourist service "is a definite success. It would not be accurate, however, to say that the success

has exceeded our expectations. We at Pan American always thought the new service would generate more traffic. It did. We definitely feel that the low fare service has created business which otherwise would not be available."



Lipscomb



Nilert

Lipscomb added, "We have seen nothing so far to alter our conviction that an even lower trans-Atlantic tourist class fare would generate still more business on a profitable basis. We think that the present fare level is the only possible explanation for the current record-breaking trans-Atlantic season."

Several others were not so willing to give all the credit for good summer business to low fares. Although saying the plan has been a success, Henri J. Lesieur, general manager in the U. S. for Air France, said, "It was obvious that some new traffic would be created, but in view of the great tourist season enjoyed by Europe—the greatest so far—it is reasonable to assume that this traffic would have moved, regardless of a tourist class service."

A somewhat similar view was taken by Tore Nilert, U.S. manager for Scandinavian Airlines System: "So far it is impossible to say how successful the introduction of the tourist fare is to be for the airlines, as even without the tourist fare during the peak season we would, no doubt, have been able to fill our planes at the old standard rate. The tremendous traveling year that 1952 has proved to be shows that the demand for space was much heavier than all the carriers combined could meet."

"Also, this year as well as other years, the airlines have been to a great extent dependent on the overflow business from the steamship companies despite the added tonnage they have put into trans-Atlantic service. I suppose that in about six months from now we can tell about the success of the fare."

"One thing we know for a fact, however, is that it has contributed to

lengthening our season. May was extremely successful."

Fernand J. Martens, U.S. manager for Sabena, said there is no doubt that the tourist-class fare created new business (Sabena tripled its revenues over last year): "From a sales point of view, it would naturally seem that the lower the fare the easier it is to sell. The sales viewpoint is not the only one taken into consideration when fares are established; costs are the main element."

It is too early to give definitive answers, E. O. Cocke, v.p.-sales of TWA, said, but he added that there has been no discernible change in the seasonal pattern of trans-Atlantic business. Heavy eastbound in the early part of the summer, "and it appears that it will be heavy westbound the latter part of the summer." TWA is giving thorough study to its tourist fare business.

A Success

G. A. W. Wynne, director of public relations in New York for British Overseas Airways Corp., answering for his company, said BOAC regards the tourist service as a success and that "it has come up to, if not exceeded, our expectations," and "the results are generally pretty satisfactory."

Y. Yoppel, U.S. manager for El Al, concurred that "the new low fare has been a success, and in our case has been above expectations." He added that although 1952 has been much more successful than 1951, "the increase may not be entirely due to the new low rates. They have, of course, undoubtedly augmented traffic to some degree by bringing trans-Atlantic air travel within the means of a much wider income group."

One airline, SAS, feels that liquor should be sold on tourist flights. "The only thing our passengers cannot understand is since we dare to sell food to them, how come we do not dare to sell them liquor as on first class flights." The other carriers did not mention the liquor problem and only one, Sabena, intends to recommend changes in the meal plans. All meals are sold to tourist passengers, but there are many variations in the manner in which this is handled.

Even greater satisfaction was voiced by M.E.A.L. de Jong, commercial manager of KLM's North American division, who stated, "The new trans-Atlantic tourist fare scheme has definitely proved to be a success above expectations. It has created new business for KLM, which otherwise would not have been available."

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AMERICA'S LEADING AIRLINE

AMERICAN AIRLINES INC.

SEPTEMBER 1, 1952

31



No One Gets Rich in Alaskan "Air Rush"

Airlines are a necessity, but one-way hauls, high costs, and seasonality take big financial toll among carriers.

By ERIC BRAMLEY

(This is the first of a series of articles by AMERICAN AVIATION's executive editor who has just returned from an extended tour of Alaska and its aviation facilities.)

THE AIRPLANE in Alaska has a transportation monopoly unequaled in few places in the world, but it's not a monopoly from which anyone is making a fortune.

The airlines in Alaska consist largely of second-hand, surplus airplanes. They've been aided by war-built airports and airways. They're plagued by a number of tough problems. Yet they're giving excellent service to a sparsely settled Territory that covers 571,000 square miles of land area, with only 500 miles of railroad and few roads that go anywhere.

Last year, 177,056 passengers traveled on the main and bush routes of the nine intra-Alaskan airlines certificated by the CAB for passengers, mail, and freight. Figures do not include U. S.-Alaska operations of Alaska Airlines and Pacific Northern Airlines, or local traffic carried by Pan American World Airways.

Another 8,001 passengers rode with certificated non-mail carriers, of which CAB listed three. Eight exempted car-

riers hauled 9,057, while pilot-owners (one-plane bush operators) hauled 6,901. There were 42 active pilot-owners.

Most of Alaska is covered by the nine airlines with mail certificates, but the other carriers are also furnishing a vital service in a number of areas. Alaska, superimposed on a map of the U. S., would stretch from border to border and coast to coast, if you include the Aleutian Chain and Southeastern Alaska. In most places, the airplane is the only form of transportation. Therefore all types of service are needed.

Public Subsidy

Although the CAB records show that the nine mail carriers are subsidized, the term "subsidy" will get you an argument from the president of any airline in the Territory. These men admit the need for substantial mail pay, but they believe it's a subsidy to the public rather than to the carriers.

A couple of years ago, a Post Office Department rezoning of Alaska made it possible to send many items by parcel post (surface rates) much cheaper than by air freight. The public is making increasing use of this method. The shipments go by air at surface rates because there's no other way for them to

go. Air freight is used when articles don't meet Post Office size and weight specifications. In many instances, the airlines haul first, second, third, and fourth class mail.

How else can this be defined except as a subsidy to the people, the airlines ask.

Certainly no one is getting rich in the airline business, despite the virtual monopoly. The reasons for this situation, and the reason why government support is needed:

Spread Thinly

• **Sparse population:** Although population is growing rapidly, the 1950 census listed it as only 128,643. Present estimates are above 135,000, which still figures out to be less than 0.3 per square mile. Considerably over half of this population is in the Anchorage and Fairbanks districts. The rest is spread thinly. There's not much for the airlines to work with.

• **Seasonality:** Travel varies greatly between summer and winter. The airlines must have the capacity to handle peak summertime business of fishermen, cannery workers, construction workers, miners, tourists, etc. Winter traffic is low. Result: poor aircraft utilization—sometimes as low as one hour 45 minutes a day on a year-round basis.

• **Nature of haul:** "The curse of all transportation in Alaska is the one-way haul," one airline president said. A good load to a point in the bush is offset by little or no return business. Yet the transportation must be furnished—there's no other way to go.

Higher Wages

• **Cost of operations:** Prices of most things are much higher than in the States. Salaries and wages likewise are high—an inexperienced airline ticket agent will start at about \$325 a month. Costs of maintenance, supplies, parts, labor, etc., are a serious problem. Passenger fares are already high—anywhere from 9c to 10c a mile to as high as 40c in a few areas—but they still don't keep up with costs. In some areas, the carriers must fly their own gasoline to outlying stations that can't be reached by water, rail or road. They figure that this gasoline costs them better than \$1 per gallon. As one official put it: "It's the price of doing business in a semi-frontier area."

• **Cost of money:** Several operators remarked that in order to obtain bank loans, they must pay 8% interest.

• **Personnel turnover:** Most airlines have a high employee turnover, caused by attractive wages offered in other industries. A few lines are installing retire-

ment plans in an effort to build stable working forces and to cut down on cost of continually training new personnel.

• **Weather:** Sub-zero winter temperatures complicate both operations and maintenance. Engines must be preheated, efficiency of maintenance personnel is low. In some cases, maintenance must be performed outdoors because of lack of hangar facilities. In the summer, it is often necessary to overfly towns in certain areas because of low ceilings. It all adds up to high costs.

Despite these problems, the airlines are given credit for doing a good job of serving the public. And their safety record is surprising—few have ever had any passenger fatalities.

Airport Situation

The airport situation is considered fairly adequate, thanks largely to the war, when new fields were built and old ones enlarged. Construction of new facilities for both land and water operations is being carried on by the Alaskan Department of Aviation. Under Tony Schwamm, director. Federal aid funds are channeled through the department.

The Civil Aeronautics Administration owns and operates Alaska's two major civil airports, Anchorage International and Fairbanks International. Not all carriers are using the Anchorage field because of lack of hangars and other facilities—some use Merrill Field; Northwest uses Elmendorf, the Air Force base. A terminal building is now under construction at Anchorage. Fairbanks lacks both a modern terminal building and hangars.

At other points throughout Alaska, CAA is operating towers, airways facilities, and communications. No matter how small the stop, if there are facilities to be manned, the CAA's in evidence.

Bush Pilots

The number of independent bush pilots (pilot-owners) is shrinking. CAB lists 42 active ones against 55 a year ago. Their total passenger and freight business last year was considerably under the year before. The pilot-owner is restricted to one airplane with seating capacity of five or less. He can't operate between any two points that are served by a scheduled carrier three times a week or more.

A lot of people depend on the pilot-owners for their transportation and supplies. But the restrictions under which these men operate make it tough. All their flying is day contact. They receive no mail pay—if they carry mail it's by special arrangement with individuals, or it's hauled free. The pilot-owner is his own maintenance man and traffic director. Sometimes he works most of the night on his plane so he can fly it all the next day.



BOEING 80-A, pictured above at Merrill Field, Anchorage, is typical of old equipment used until recently by Alaskan airlines. This tri-motored Boeing, said to be the last of its kind, was used by U. S. airlines in the 1930's. It was recently retired by Reeve Aleutian Airways.

The eight exempted carriers each have more than one plane, but their equipment is also used for other purposes, such as flight instruction. Some of them operate tours. Theirs is more of a fixed base operation than it is an airline.

Seattle Gateway

A separate part of the airline picture is the U. S.-Alaska segment, through the Seattle gateway. Five years ago, this route was a tangle of non-scheduled operators, plus some scheduled lines running charter trips. This has changed since CAB decisions gave Northwest Airlines and Pacific Northern Seattle-Anchorage routes and Alaska Airlines Seattle-Fairbanks, in addition to the PAA operation from Seattle to Fairbanks through Juneau and Whitehorse.

Now the scheduled lines have 80% to 90% of the business, but they're knocking heads with the only big non-sked left—Amos Heacock's Air Transport Associates.

Heacock has done a skillful job of gaining public support in Alaska. His

publicity rates considerable space in the newspapers. He has a following of merchants who claim that his cargo service is good and that CAB shouldn't put him out of business. The merchants impressed this on CAB Member Joe Adams during his recent Alaskan trip.

The skeds claim that this merchants' meeting with Adams was arranged by Heacock (who was present) and that they could find just as many others who would say that ATA wasn't needed. Nevertheless, the publicity from such a meeting is in favor of ATA and against the skeds and CAB. The skeds probably haven't told their story forcefully enough.

The secret of ATA's success is attributed by some to the fact that it carries cargo and passengers northbound in its cheaply-leased C-46's and picks up a back-haul of passengers (there's little southbound cargo) at a low rate. And it performs this service often enough to make it profitable.

ATA's fare is \$69 northbound Seattle-Anchorage, \$60 southbound, against

Who's There?

Certificated Intra-Alaskan Airlines

Alaska Airlines, Anchorage
Alaska Coastal Airlines, Juneau
Byers Airways, Fairbanks
Cordova Air Service, Cordova
Ellis Air Lines, Ketchikan
Pacific Northern Airlines, Anchorage
Northern Consolidated Airlines, Anchorage
Reeve Aleutian Airways, Anchorage
Wien Alaska Airlines, Fairbanks

Certificated Non-Mail Carriers

Bristol Bay Airlines, Dillingham
Munz Air Service, Nome

Christensen Air Service, Anchorage (Christensen's Anchorage-Seward mail route was recently purchased by Cordova Air Service)

Exempted Carriers

Jack Carr Service, Anchorage
Collins Air Service, Anchorage
Ketchikan Air Service, Ketchikan
Kodiak Airways, Kodiak
Interior Airways, Fairbanks
Bob Rice Air Taxi, Fairbanks
United Airmotive, Anchorage
Western Alaska Airways, Dillingham

\$75 each way in NWA and PNA DC-4's and \$105 on NWA's Stratocruisers. If ATA were a certificated carrier, it would be unable to use the C-46's for passengers.

The skeds state that their cargo capacity northbound is more than enough to meet the demands on a year-round basis, and that if it were not for strikes that have plagued the U. S.-Alaska steamship companies there would never be any occasion for complaint. Making was a strike this summer, but even then the skeds say that on many occasions they had unused space northbound.

Principal problem on this route, particularly for PNA and Alaska Airlines is the temporary nature of the certificates. These expire late next year, making it impossible at this time to obtain any substantial amount of money for new equipment and expanded service. Until such time as CAB re-examines the case, there'll be little change in the status quo.

What do the intra-Alaskan certificated airlines need?

- **Visits.** A better understanding of their problems by the CAB in Washington is one thing they need and hope for. The situation is much better now than it used to be, but the operators would welcome more visits by CAB members—not short visits, but working inspection trips to find out firsthand what the problems are. Joseph Fitzgerald, director of the Board's Alaskan bureau, is credited with doing a good job, but the airlines still want visits from headquarters.

- **Equipment:** The airlines have been built largely on U. S.-discarded and surplus airplanes. There's going to be a definite need for a DC-3 replacement, and probably also a smaller twin-engine airplane.

The planes must have special characteristics: they must be able to get in and out of small areas, must have large doors, and must be adaptable to wheels, skis, and floats. The operators are afraid manufacturers won't want to cater to such a relatively small market. They're also afraid of what new equipment may cost.

- **Market.** They need a broader market to tap for non-mail business. With the public using more mail and less freight, any increase in non-mail revenue must come from passengers. The big hope here, as expressed by almost all airlines, is tourist trade.

This, however, must await construction of more adequate facilities to handle visitors. The Alaskan hotel situation is extremely tight—hotels are pressed to take care of present business. With more adequate facilities, however, the airlines feel that tourist trade presents great possibilities.

The USAF is Coming, 36 Airports Hear

Scheduled carriers escape generally undisturbed as Air Force announces plans for facilities.

By JAMES J. HAGGERTY

THE AIR FORCE will spend over \$220,000,000 during the fiscal year 1953 (which ends June 30, 1953) for the acquisition of facilities at municipal airports, but the program will involve little disruption of certificated airline activity.

In all, there are 36 airports included in the program, but in only two cases will there be requirements for moving certificated airline operations. In 16 cases the Air Force will only be a tenant, and at six other airports there is no commercial activity now. The Air Force plans to take over the other 12 fields for use as USAF installations, but provisions have been made at these bases for continued use by the airlines serving them.

Panel Recommendations

An Air Force spokesman pointed out, however, that in making joint-use provisions, the USAF takes cognizance only of certificated operations. Thus, some fixed base operators and other non-certificated operators may be forced to move. The spokesman, Col. Dudley P. Eaton of the USAF's Air Bases Division, said that the Air Force will abide by the recommendations of the Air Coordinating Committee's Airport Use Panel, and fixed base or other non-certificated operators may be permitted to remain at the USAF installations in cases where the AUP finds that there is no other available site for such commercial activity.

The two cases which will require moves by certificated operators are Moore Field, Mission, Tex., and Lakeland Airport, Lakeland, Fla.

At Moore Field the move has already been accomplished. Trans-Texas Airways is now using Miller Municipal Airport at nearby McAllen, Tex. The USAF will spend \$10,309,000 at Moore for airfield pavements, liquid-fuel storage and dispensing facilities, communications and airfield lighting facilities, operational facilities, aircraft maintenance facilities, training facilities, troop and family housing, administrative and community facilities, utilities, land acquisition, storage facilities and shops. Moore will be an Air Training Command base.

Lakeland Airport will become an Air Force installation with no provision for commercial operations, but the city has made provisions to accommo-

date National Airlines at nearby Lodwick Field. The USAF will spend \$13,966,000 at Lakeland for airfield pavements, liquid-fuel storage and dispensing facilities, communications, navigational aids, airfield lighting, operational, training and aircraft maintenance facilities, troop and family housing, administrative and community facilities, utilities, land acquisition, medical facilities and storage facilities. The base will be used by Strategic Air Command.

Here, in detail, is the rest of the 1953 program, showing the amount of money to be spent on each base, the improvements to be made and the effect on certificated operations at each base:

Strategic Air Command Bases

Lincoln Municipal Airport, Lincoln, Nebr.: Airfield pavements, liquid-fuel storage and dispensing facilities, airfield lighting, maintenance facilities and land acquisition, \$9,093,000.

Current airline usage: Braniff Airways, United Air Lines. Provisions made for continued airline usage; other commercial activity to move to Union Airport.

Selman Field, Monroe, La.: Airfield pavements, facilities for liquid-fuel storage and dispensing, communications, navigational aids, airfield lighting, operational facilities, maintenance facilities, troop and family housing, administrative and community facilities, utilities, land acquisition, medical facilities and storage facilities, \$18,285,000.

Current airline usage: Delta Air Lines; provisions for continuance.

Sioux City Municipal Airport, Sioux City, Iowa: Airfield pavements, liquid-fuel storage and dispensing facilities, communications, airfield lighting, operational and maintenance facilities, troop housing, utilities, medical facilities and storage facilities, \$19,820,000.

Current airline usage: Braniff; provisions for continuance.

Tye Field, Abilene, Tex.: Airfield pavements, liquid-fuel storage and dispensing facilities, communications, navigational aids, airfield lighting, operational and maintenance facilities, troop housing, administrative and community facilities, utilities, land acquisition, medical facilities, storage facilities and shops, \$23,472,000.

No civil aviation.

Air Defense Command Bases

(USAF to be tenant only)

Burlington Municipal Airport, Burlington, Vermont: Operational facilities, utilities and storage facilities, \$579,000.

Current airline usage: Colonial Airlines, Northeast Airlines.

Duluth Municipal Airport, Duluth, Minn.: Navigational aids, operational, administrative, community and storage facilities, and utilities, \$704,000.

Current airline usage: Northwest Airlines, Wisconsin Central Airlines.

Geiger Field, Spokane, Wash.: Operational and maintenance facilities, utilities and storage facilities, \$744,000.

Current airline usage: West Coast Airlines, Northwest, United.

Greater Pittsburgh Airport, Coraopolis, Pa.: Airfield pavements, operational, administrative and community facilities, utilities and storage facilities, \$976,000.

Current airline usage: Northwest, National, Capital Airlines, All American Airways, Trans World Airlines, Slick Airways, Eastern Air Lines.

Majors Field, Greenville, Tex.: Land acquisition, \$23,000.

Current airline usage: Central Airlines.

McGhee-Tyson Airport, Knoxville, Tenn.: Airfield pavements, navigational aids, operational and maintenance facilities, administrative and community

facilities, utilities and storage facilities, \$1,179,000.

Current airline usage: American Airlines, Delta Air Lines, Capital.

Minneapolis-St. Paul International Airport, Minneapolis, Minn.: Land acquisition and storage facilities, \$450,000.

Current airline usage: Capital, Northwest, Braniff, Wisconsin Central, Western Air Lines.

New Castle County Airport, Wilmington, Del.: Airfield pavements, liquid-fuel storage and dispensing facilities, troop housing, utilities and storage facilities, \$1,776,000.

Current airline usage: All American, American, Eastern, Slick, TWA.

Niagara Falls Municipal Airport, Niagara Falls, N. Y.: Airfield pavements, liquid fuel storage and dispensing facilities, navigational aids, operational and maintenance facilities, troop housing, utilities, land acquisition, medical facilities, storage facilities and shops, \$1,394,000.

Current airline usage: American, Mohawk Air Lines.

O'Hare International Airport, Chicago, Ill.: Airfield pavements, liquid-fuel storage and dispensing facilities, operational and maintenance facilities, administrative and community facilities, utilities, storage and shops, \$3,801,000.

Current airline usage: Slick Airways, Inc.

Paine Field, Everett, Wash.: Operational and storage facilities, utilities, \$1,251,000.

Palmdale-Los Angeles County Airport, Palmdale, Calif.: Airfield pavements and airfield lighting, \$380,000. Alternate base for airlines serving Los Angeles.

Portland International Airport, Portland, Ore.: Airfield pavements, liquid-fuel storage and dispensing facilities, maintenance facilities, utilities, storage facilities, \$973,000.

Current airline usage: Alaska Airlines, Pacific Northern Airlines, The Flying Tiger Line, Pan American World Airways, West Coast Airlines, Northwest, United, Western.

Truax Field, Madison, Wis.: Airfield pavements, liquid-fuel storage and dispensing facilities, operational facilities, troop housing, utilities, storage facilities and shops, \$1,518,000.

Current airline usage: Northwest, Wisconsin Central.

Charlotte County Airport, Punta Gorda, Fla.: Airfield pavements, liquid-fuel storage and dispensing facilities, communications, navigational aids, airfield lighting, operational and maintenance



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nance facilities, training facilities, troop housing, administrative and community facilities, medical facilities, utilities, storage facilities and shops, \$2,731,000.

No civil aviation.

Yuma County Airport, Yuma, Ariz.: Airfield pavements, liquid-fuel storage and dispensing facilities, operational facilities, troop housing, administrative and community facilities, utilities, storage facilities and shops, \$1,965,000.

Current airline usage: Western.

Tactical Air Command Bases

Alexandria Municipal Airport, Alexandria, La.: To become permanent USAF installation. Liquid-fuel storage and dispensing facilities, operational and maintenance facilities, troop housing, administrative and community facilities, land acquisition and storage facilities, \$2,852,000.

Current airline usage: Delta. Provisions have been made for continuance of Delta's operation until such time as the city provides another airport.

Ardmore Municipal Airport, Ardmore, Okla.: Airfield pavements, liquid-fuel and dispensing facilities, navigational aids, operational and maintenance facilities, land acquisition and storage facilities, \$4,045,000.

To be under USAF control with provision for continuance of Central Airlines' operation.

Blytheville Municipal Airport, Blytheville, Ark.: To be USAF base. Airfield pavements, liquid-fuel storage and dispensing facilities, communications, navigational aids, airfield lighting, operational and maintenance facilities, troop and family housing, administrative and community facilities, utilities, land acquisition, medical facilities, storage facilities, shops, \$11,602,000.

No current airline usage. South Central Air Transport has applied for permission to serve Blytheville and the USAF has agreed to provisions for SCAT's operation if a certificate is granted.

Galveston Municipal Airport, Galveston, Tex.: To be USAF Base. Airfield pavements, liquid-fuel storage and dispensing facilities, navigational aids, airfield lighting, operational and maintenance facilities, training facilities, troop housing, administrative and community facilities, utilities, medical facilities, storage facilities and shops, \$5,746,000.

Current airline usage: Braniff, Trans-Texas; provisions for continuance.

Myrtle Beach Airport, Myrtle Beach, S. C.: Airfield pavements, liquid-fuel storage and dispensing facilities, communications, navigational aids, airfield lighting, operational and maintenance facilities, troop and family housing, administrative and community facilities, utilities, land acquisition and storage facilities, \$8,457,000.

Current airline usage: Piedmont Airlines; provisions for continuance.

Raleigh-Durham Municipal Airport, Raleigh-Durham, N. C.: Airfield pavements, liquid-fuel storage and dispensing facilities, communications, navigational aids, airfield lighting, operational and maintenance facilities, troop and family housing, administrative and community facilities, utilities, medical facilities, storage facilities, land acquisition and shops, \$14,838,000.

Current airline usage: Capital, Eastern, Piedmont; provisions for continuance.

Seymour-Johnson Field, Goldsboro, N. C.: To be USAF base. Airfield pavements, liquid-fuel storage and dispensing facilities, communications, navigational aids, airfield lighting, operational and maintenance facilities, training facilities, troop and family housing, administrative and community facilities, utilities, storage facilities, land acquisition and shops, \$7,092,000.

No current airline usage. City to move present non airline tenants.

Air Training Command Bases

Foster Field, Victoria, Tex.: To be USAF base. Airfield pavements, liquid-

fuel storage and dispensing facilities, communications, airfield lighting, maintenance and training facilities, troop housing, utilities, land acquisition and storage facilities, \$4,383,000.

No current airline usage.

Harlingen-All Valley Municipal Airport, Harlingen, Tex. Now being used jointly by USAF and Trans-Texas; will continue. Airfield pavements, training facilities, troop housing, utilities and land acquisition, \$5,796,000.

Laredo Municipal Airport, Laredo, Tex.: Now being used jointly by USAF and Braniff; will continue. Airfield pavements, liquid-fuel storage and dispensing facilities, communications, airfield lighting, operational, training and maintenance facilities, troop housing, administrative and community facilities, utilities, land acquisition and storage facilities, \$4,266,000.

Military Air Transport Service Base

Palm Beach County International Airport, W. Palm Beach, Fla.: Liquid-fuel storage and dispensing facilities, communications, maintenance facilities, utilities and shops, \$1,200,000.

Current airline usage: Bahamas Air (BOAC), Aerovias "Q," Eastern, National; provisions for continuance.

Continental Air Command Base

Long Beach Municipal Airport, Long Beach, Calif.: USAF already aboard as tenant. New program contemplates no interference with operations of The Flying Tiger Line, United and Western. Liquid-fuel storage and dispensing facilities, navigational aids, maintenance facilities and utilities, \$112,000.

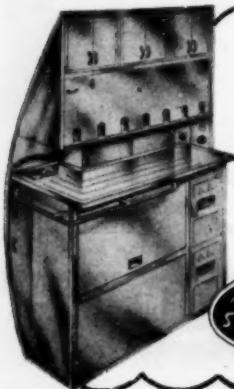
Research and Development Command Base

Hanscom Field, Bedford, Mass.: Airfield pavements, liquid-fuel storage and dispensing facilities, operational and maintenance facilities, training facilities, troop housing, administrative and community facilities, utilities, research, development and test facilities, medical facilities and storage facilities, \$10,520,000.

Provision for continuance of present policy of 20% field usage by civil aviation.

APB Study Reply Date?

The August 7 date set for the Air Force and Navy to present their views on the APB staff study on multiplicity of models to the Aircraft Production Board was postponed. Some sources state that the date is tentatively scheduled for September 12, but an Air Force spokesman has stated that there is no firm date.



A PREVIEW

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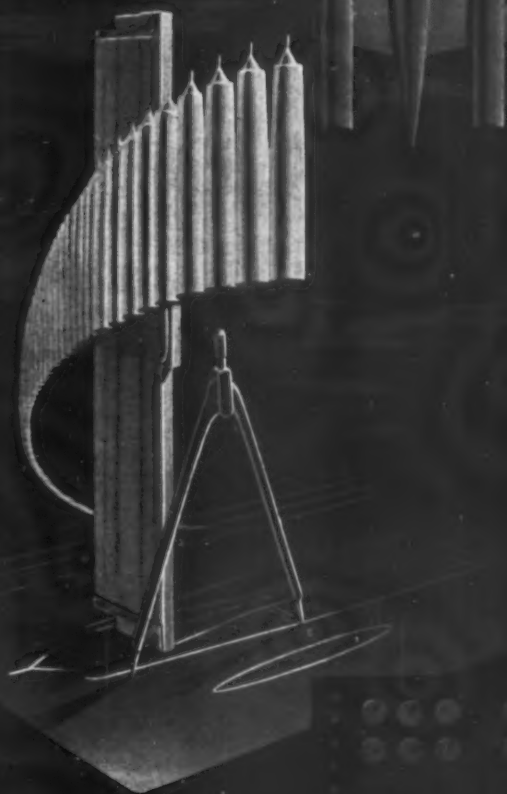


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Airworthiness Meeting Score Card

SUBJECT	PROPOSED BY/PROPOSAL	OBJECTOR/OBJECTION	PROBABLE CAB ACTION
Take-off cooling tests	CAA: require during certification testing.	AIA: recommendations have already been used on three models without indication of marked improvement.	ALPA, FEIA, ATA favor will make the CAA proposal a requirement.
Preflight performance information	CAA: give pilot V ₁ , V ₂ flap setting, etc. on clearance form.	ATA: not practical, not suitable for regulation. ALPA: of questionable value as proposed.	No action at this time.
Electrical circuits	CAA: provide means to deactivate those in fire zones.	AIA: completely disapprove idea. ATA: manual material should clearly outline intent.	Lack of understanding of implications will result in deferment at this time.
Fuel jettisoning	ATA: permit fuel dumping to 105% of landing gross weight.	CAA: would permit some weight increases if adopted.	No action at this time.
Oil quantity indicators	CAA: require in CAR 4b.	AIA: oppose unless a low-level indicator would suffice. ATA: oppose except in aircraft with oil transfer systems. ALPA: favors but opposes AIA suggestion.	Will be required on future aircraft.
Autofeather indication	ATA: recognize as equivalent to auto feathering.	CAA: needs a specific proposed installation. ALPA: pilots seem to favor indication but not certain of exact position to take.	No action until a specific proposal is submitted for CAA approval. Should come soon.
Demonstrated crosswind	CAA: use a 30 mph minimum value.	AIA: no need for change. ATA: cautions against such action. ALPA: present regulations are satisfactory for now.	No action.
Rear-facing seats	CAB: an early decision on their worth and need.	ATA & AIA: no facts to prove them safer; no justification for requirement.	No regulations now. Planned study and future discussion only when facts are known.
Cockpit standardization	ATA: adopt SAE-Munitions Board agreements.	Complete accord on principle. FEIA: wants standard flight engineer's panel.	Regulations will be revised. Standard flight engineer's panel will be studied.
Crash load factors	CAA: increase factors above 9g.	AIA: no justification. Wants decrease from 9g back to 6g also based on lack of proof. ATA: no change now.	ATA suggestion to wait will prevail.
Fuel transfer indication	CAA: provide warning means to prevent overfilling during transfer.	ATA: opposes warning device and favors structure protection only.	With ALPA, FEIA and AIA in support, proposal will be adopted.
Zone 1 fire extinguishers nacelle fireproofing	CAA: install one or the other on aircraft manufactured after 1/1/53 and both on new designs.	AIA: not a subject for regulation. ATA: agreeable if not retroactive. ALPA & FEIA in favor.	Regulation will be adopted but not retroactively.
Ditching provisions	ALPA: brief passengers on emergency equipment before boarding airplane.	ATA: favors briefing, but opposes the pre-boarding feature. Suggests briefing in airplane.	Regulations will require briefing in some form.
Power-indicating devices	CAA & ALPA: require in future aircraft manufactured.	ATA & AIA: question if equipment is a fit subject for regulation.	Will be required on aircraft with engines of 2000 cu. in. or greater displacement.
Position lights	ALPA: increase flashing rates and install anti-collision lights.	ATA: agree on increase in flashing rates but await results of airline experiments this winter on anti-collision lights.	ALPA agreement with ATA proposal will prevail. Higher flashing rates will be required but no anti-collision lights now.
Drift-down	ATA: permit in enroute engine-out performance.	CAA: premature at this time. Await performance committee findings. ALPA: sympathize, but some pilots do not. Airlines should sell to pilots first.	CAA stand will prevail in view of proximity of committee's findings.
Temperature & humidity accountability	Apply to take-off and initial climb performance.	ATA: difficult and inappropriate to apply to present rules. AIA: await CAA-CAB performance committee results. CAA: agree with need but favor AIA suggestion to wait.	AIA-CAA agreement will prevail.
Engine certification tests	CAA: require more stringent tests for longer periods.	AIA: a better test at present duration.	AIA proposal will stand as improvement over present requirements.
CAR part 3 applicability	CAA: limit to aircraft of 12,500 pounds or less.	AIA: oppose unless leeway is allowed for weight gain after initial tests.	Limit will be adopted allowing 2,500 pound gain over the 12,500 pounds.
Transport category helicopter	Discuss requirements now in detail.	AIA: now is not the time. Get experience on military versions first.	No action until discussed. Maybe next year.

Discord Marks Airworthiness Meeting

AIA, Government, ATA, ALPA clash; perennial arguments crop up; 'copter regulations stalled.

By JOSEPH S. MURPHY

ANOTHER year has rolled by and early last month the scene was once again set for aviation's annual battle of technical verbiage, more officially designated the Civil Aeronautics Board Annual Review of Airworthiness Regulations.

The ammunition was supplied in a 23-page book of agenda items submitted predominantly by the CAA and the Air Line Pilots Association. The Air Transport Association's limited proposals reflected to a great degree the effort it usually extends, not toward introducing new or changing old requirements, but rather toward combating what it is convinced are unnecessary changes.

CAB Chairman Donald W. Nyrop in his opening address lauded the accomplishments of the previous two meetings, but before the close of the first week's session it was apparent that the success of this year's meeting looked very, very doubtful in some quarters.

AIA Dissatisfied

The Aircraft Industries Association, represented at the meetings by its staff technical service chief, I. C. Peterson, expressed its dissatisfaction with the course of events on behalf of the aircraft manufacturers.

The reason for AIA's discontent was the tendency on the part of the Government's technical people to minimize the principles adopted by the Civil Aeronautics Board in determining the suitability of whatever new regulations might be adopted. Citing in particular the responsibility of the annual review to delete unnecessary or obsolete requirements, AIA pointed out the total lack of evidence displayed in the first week's sessions toward fulfillment of this end.

Carrying its statement of dissatisfaction further, AIA expressed concern over the airline pilots' and flight engineers' never-ending campaign to promote the adoption of new regulations and to urge the inclusion on every new aircraft of each new device or design improvement which the manufacturers have developed during the past years on their own initiative. This continued effort, if successful, warned AIA, will lead to a stereotyped transport design, devoid of manufacturer choice in regard to further improvement, and frozen by Government specifications.

The Board's principles of promulgation to which the AIA referred are new to the annual review. They provide that technical rules should be confined

to material which has been substantiated as being essential to safety and that administrative rules should be minimized, insofar as safety permits.

Individual provisions in regulations, according to these new principles, should not impede new design development, should reflect the latest "state of the art," and should utilize only procedures and equipment which are available and have been proven reliable.

Should accidents or other unfavorable service experience suggest changes in regulations, caution should be exercised in extending their application to other aircraft or component types. Detail design changes which the industry generally adopts should not, for that reason alone, be made a part of Civil Air Regulations.

The meeting had its new subjects, but many of the perennial arguments of the past arose, each with a slightly new look. The attendance of over 75 representatives from airlines, aircraft manufacturers and associations was more than representative of a cross section of the industry. ALPA's Captains W. W. Moss, T. G. Linnert, and Carl Eck represented the airline pilots' interests; ATA's Allen Dallas and Don Talmadge offered the airlines' position. W. D. Kent of FEIA represented the flight engineers.

The CAB's 23-page agenda provided discussion of many diverse subjects. American Airlines' Harold Hoben and Frank Kolk led the airlines' argument for recognition of drift-down in the transport category enroute performance stage. Terming the opposition offered to the idea "academic," they explained that the present requirements are hurting the airlines, that they are unreasonable particularly in view of recognition of drift-down for non-transport category aircraft, and that they should be changed now, as the airlines' need would diminish with the introduction of jet type airplanes.

CAA's R. B. Maloy countered that action at this time would be premature and that the results of the CAA-CAB performance committee study expected this December should provide the answer. ALPA sympathized with the airline proposal but reemphasized in this discussion its deep-seated opposition to any relaxation of CAR 4b requirements which, it feels, design the airplane.

The Aircraft Industries Association's major victory in the sessions was the postponement of discussion of CAA's proposals for a transport helicopter. Led by Peterson of AIA, a strong representation from five leading helicopter manu-

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facturers contended that the present was not the time to "gaze into a crystal ball and anticipate" what the requirements should be, suggesting instead that a path of caution be followed until the needed experience is gained with models developed for military use.

The industry warned that present costly and time-consuming helicopter certification efforts were only being carried on as the result of an agreement between the manufacturers and the military, and that these efforts would start to dwindle with the forthcoming completion of a military helicopter specification to the point where there will be no CAR 6 certification projects in existence.

CAA's George Haldeman expressed his deep discouragement with the industry's position and trusted that the government agencies, the manufacturers, and the operators could meet within the next six months to discuss the regulations and all other phases of the subject to insure an early solution.

Ditching Survival

A subcommittee on ditching survival equipment heard Pan American's Captain J. C. Burn, ALPA representative and survivor of two emergency ditching operations, propose that all passengers be briefed on the use of emergency equipment before boarding the airplane.

ATA's E. T. Burnard opposed the preboarding feature of Burn's proposal, expressing the airlines' belief that much better results could be realized by conducting the briefing in the airplane after all passengers were boarded.

Douglas Aircraft Company's Warren Dickinson headed the aircraft manufacturers in objecting to CAA proposals for installation of engine power-indicating devices (BMEP indicators) and provision for deactivation of electrical circuits in fire zones.

Discussing the former proposal, Dickinson questioned whether torque-meters were a fit subject for regulation. He said that CAA would have to show in what way present aircraft do not comply with its suggested revision of fire zone electrical circuits before he could offer other than complete disapproval of its proposal. The aircraft manufacturers' representation was rounded out by Convair's H. F. King and J. F. Woodell, Boeing's E. W. Norris, Lockheed's E. W. Peterman, and North American's E. T. Williams.

Major issue at stake for the airline pilots was recognition of temperature and humidity accountability for take-off and initial climb performance, a carry-over from past years' sessions. Handicapped by limited attendance and lack of supporting data in the first day's meeting as the result of the current ALPA presidency dispute, Pan Amcr-

ican World Airways' Captain W. W. Moss strengthened his forces on the second day well in advance of the performance discussion.

Emphasizing how strongly ALPA felt about its proposal and the continued complaints that are received from airline pilots about marginal performance under adverse temperature and humidity conditions, Moss urged that regulations should be promulgated now. In support of his case, Moss added that such regulatory action was necessary because there has been no tendency in the past years to improve the over-all level of airline safety. Admitting that no recent accident could be blamed on conditions which the proposal would correct, Moss pointed out that there have been numerous incidents of this nature.

Of slightly less importance to ALPA was its proposal for increased navigation light flashing rates and installation of anti-collision lights. After dropping its suggestion of higher intensity lighting of the existing systems, the pilots representation found agreement in the ATA on the question of higher flashing rates, almost assuring a permanent change in the regulations. ATA's stand for postponement of action on anti-collision lights pending the completion of airline experiments this winter was agreed upon by the pilot group after considerable debate.

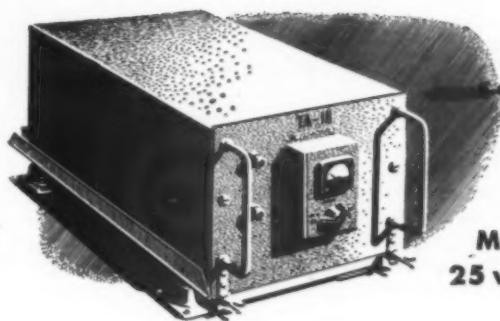
Performance Study

Although of minor significance at this year's meeting and almost sure to hold the center of interest at the 1953 session, the CAA-CAB performance committee reported the status of its study to the group. Encompassing not only the solution of domestic performance requirements, the committee's studies are also intended to serve as the basis for the U. S. position internationally. The progress reported promises completion of the study and distribution of a detailed proposal of regulations to interested parties this December for their comments and criticisms.

A similar report from CAA's Technical Development Center at Indianapolis reviewed the progress of testing crash-resistant fuel tanks and announced the recently tested flexible bladder tank which has withstood forces of 192g's at 64 mph. Of four-ply nylon construction, the new cell is about seven times heavier than those now used.

Concluding the two weeks of debate was a five-hour hassel on the improvement of existing CAR 13 engine certification tests. Agreeing to a more extensive test procedure at the present 150-hour duration, the engine manufacturers through the AIA held their ground against a CAA proposal for greater stringency. The "battle" remained deadlocked to the end.

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Extra Section

By William D. Perreault



BEEN WONDERING about that airline dispatcher's job? An interesting close-up of the airline dispatcher is presented in a booklet titled, "So You Want to be an Airline Dispatcher" just published by Parks College of Aeronautical Technology. Compiled from a survey of 24 chief dispatchers of scheduled U. S. airlines by A. M. Weir, the report shows that salaries range from \$359 to \$546. Seventy-seven percent of the chief dispatchers thought a pilot's license would be helpful to a dispatcher, and 53% felt an instrument rating was of value. Fifty-six percent of the dispatchers, the survey notes, are trained on the job.

From Curtiss-Wright comes a reminder that flight simulators being built in England by Redifon Limited are actually being manufactured and sold under license to C-W, which controls the basic Dehmel patents. Redifon does development work on new simulator types, such as the Comet or Britannia, within the scope required for production purposes.

The aviation industry lost an important personage last month with the death of NACA test pilot **Herbert H. Hoover**, who lost his life in an attempt to bail out of a North American B-45 jet when trouble developed during research flight tests. Hoover, 40, had been with NACA twelve years, during which time he had flown more than 100 different types of aircraft. He was the first civilian pilot to fly the Bell X-1 at supersonic speed and in general leaves his mark on many important research activities. He will be missed.

During recent work on our story regarding impending fuel shortages, it occurred to us how little is written of the petroleum industry, an industry which is so intimately related to all aviation activities. This made a book which crossed our desks this week, titled "The Oilmen," of particular interest. "The Oilmen" is a photographic story which traces the flow of oil from the wells to the user with an interesting human touch throughout. The photographs are excellent and the text pointed. It has been published by Rhinehart & Company of New York in cooperation with Shell Oil Company.

Aircraft utilization appears to be a matter of importance to everyone. During a recent visit to Trans-Canada Air Lines we found the record of the once troublesome Northstar quite impressive in this area. Of the planes flying trans-continental routes the utilization, block-to-block, is 19 hours 20 minutes. Among the 12 active airplanes (which does not count two spares and two in maintenance), block-to-block utilization time is 14 hours and 12 minutes, while over-all utilization, all planes block-to-block, is 11 hours 35 minutes.

The USAF's flying safety rate promises to set a new record in 1952 if present trends continue. In the first six months of this year the rate was 29 major accidents per 100,000 flying hours, nine percent under the 1951 record despite substantially higher activity. Highest accident rate was in jet fighter category with 79 per 100,000 hours, which nonetheless was down from 97 in the second half of 1951. Other rates included 66 for other (non-jet) type fighters, 10 for cargo aircraft, 23 for trainers.

Sandwich Deicer From Lockheed

Lockheed Aircraft Corporation has developed a new leading edge deicer consisting of an electrically heated metal-and-plastic "sandwich" construction. Although intended to solve the icing problems on high speed military aircraft, Lockheed reports that the design is readily adaptable to jet transports.

The deicer, which has been flight tested on the F-94 Starfire, consists of $\frac{1}{8}$ " panels mounted on the wing and tail leading edges. Construction involves bonding of thin layers of copper and silver to an aluminum base structure.

Maintenance Building

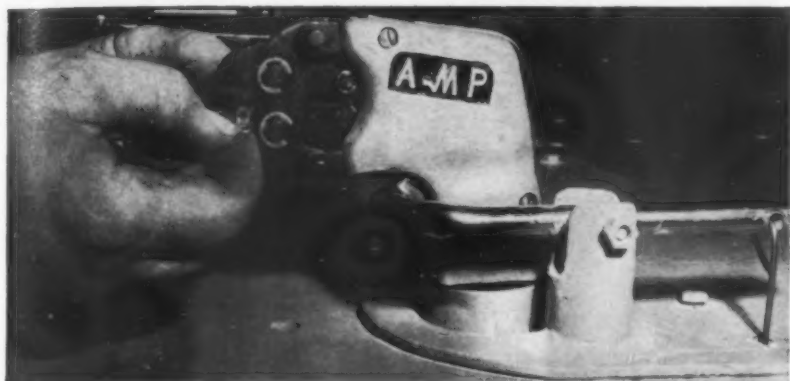
Work is progressing on Eastern Air Lines' new \$5,000,000 line maintenance building at Miami International Airport. The foundation and underground piping installation is about 95% completed and grading for the 29 acres of concrete which will surround the building has been finished. Steel erection, delayed by the recent strike, is scheduled to start in two weeks and the building is set for completion in April, 1953.



C. C. ("Chuck") Hubbard, assistant executive secretary of the Air Traffic Conference and assistant vice president-traffic of the Air Transport Association, is beginning his 22d year in the airline industry, including his 14th with ATA. He has the longest service record in ATA. He was recently delegated to perform all the functions of ATC executive secretary pending election of a successor to the late M. F. Redfern.

Hubbard joined the airlines' consolidated ticket office in Chicago in 1931, and later that year went to work for United Air Lines. During eight years with UAL he was in reservations, agency sales, served as airport ticket office manager, assistant district traffic manager, and assistant to the vice president-traffic.

Maintenance Bulletin Board



TEMCO PNEUMATIC hand lugging tool can be used portable or bench-mounted.

Temco Employee Ideas Speed, Ease Work

An easier way to do a hard job or a quicker way to do a slow one: these are the net results of the efforts of production employees at TEMCO's Dallas and Greenville, Texas, divisions.

A pneumatic hand lugging tool developed by employees at the Greenville division gives double service since it is mounted on a table so that it can be triggered by a foot pedal. This arrangement leaves the operator's hands free to work lugs, wiring, and bonding braids. The conversion back to portable use involves removing one clamp and disconnecting the air line.

A quick-action threaded clamp developed by production employee K. W. Goggans of the Dallas division expedites proof testing of aircraft control cables. In the past, the threaded terminals were screwed into a turnbuckle, which in turn was attached to the crosshead of the testing machine. Since many cables incorporate threaded terminals at both

ends the job was tiresome and time-consuming.

The new clamp is made from a 9" length of 1 1/4" bar stock, with one end cut down the center and hinged so that it may be opened. The divided end is then drilled and tapped for the desired thread. In use, the terminal is placed on the matching threads and the clamp closed and locked by a sliding sleeve.

A small alligator jaw attachment designed by production employee B. H. Davis of TEMCO's Dallas division is used as an accessory on riveters to speed up the working of small parts, such as



THREADED CLAMP (right) speeds control cable testing. Small alligator jaw (below) is used as accessory on riveters to speed up work on small parts.



control surface trim tabs. The new tool replaces the rivet gun and bucking bar formerly used for squeezing rivets in hard-to-reach areas.

Consisting of two tapered jaws which are mounted by means of a pivot, the "alligator" fits into the holes of the plunger and anvil of the riveter. The jaws are held apart by a rubber cushion until the machine is operated.

Delta Uses Engine Ground Power Check

An engine ground power check used by Delta Air Lines is specifically designed to locate ignition troubles in their early stages and features standardization among flight crew, mechanic, and inspector techniques to assure that all get the same results.

The key to this standardization is the use of field barometric pressure as a control factor. The procedure is essentially as follows:

- **The manifold pressure gauge** is read before starting engines. This is the field barometric pressure. An alternative is to set one altimeter to zero and read the barometric pressure on the inner scale.

- **On run-up** the throttles are opened until the manifold pressure reading is equal to the field barometric pressure.

- **Rpm at field barometric pressure** should be 2300 plus or minus 50. If it cannot be obtained, the engine is not delivering normal power.

In tests conducted by Delta to prove out the procedure, an engine which delivered normal power on the initial check held its rpm but dropped 4 BMEP with the rear plug removed, lost 50 rpm and 9 BMEP with both plugs out, and showed a 125 rpm loss and 15 BMEP drop with plugs removed from two cylinders.

New Run-Up Pointers

In combating recent exhaust valve difficulties experienced with Wright C18BD1 engines, Chicago and Southern Airlines has adopted some new features in its Lockheed 649 engine run-up procedure. It stresses the importance of heading the airplane into the wind even if ground winds are below 10 mph. Throughout the run-up C&S cautions that head temperatures be held below 200° C at all times, and that cowl flaps be kept full open.

AEMCO Gets Military Transport Contract

A \$7,500,000 contract has been awarded by the Air Materiel Command to the Aircraft Engineering and Maintenance Company for the maintenance and overhaul of heavy military air transports.

The new contract represents a one-million-dollar increase over one just completed by AEMCO. Work will be done at the company's Oakland Municipal Airport base.

Simple Suggestion at TWA Solves Old Problem

The suggestion system at Trans World Airlines recently paid off with the solution to the age-old problem of keeping maintenance personnel from falling through cabin center aisle floor openings while performing heavy maintenance checks. The answer was quite simple. The already-present seat belts are fastened together from seats on opposite sides of the aisle, fore and aft of the opening.



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INSTRUMENTS
ACCESSORIES**

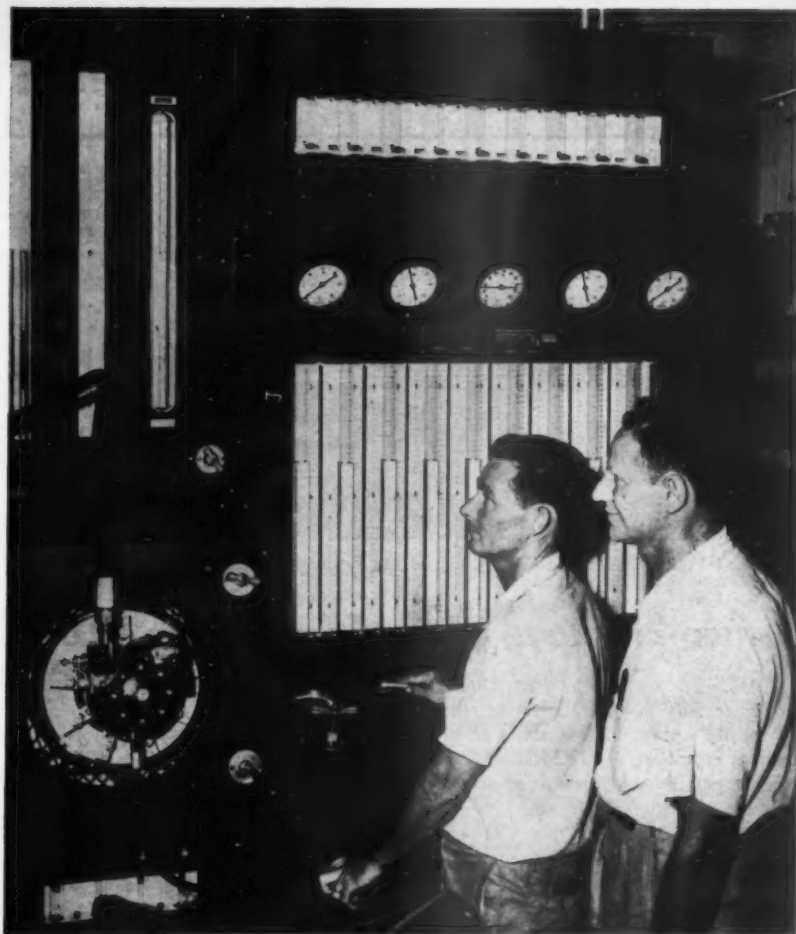
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Repair Station No. 2783

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BENDIX STROMBER SPECIALIST Ceaser Benassi gives W. W. Foust, C & S shop foreman, special instruction on the handling of Chicago & Southern's new fuel injection pump test stand.

New Test Stand for Fuel Pump Overhaul

A \$25,000 test stand and workshop for the overhaul of fuel injection pumps for Chicago & Southern's Lockheed Constellations is that line's latest addition to its Memphis overhaul base. Maintained antiseptically clean, the air conditioned shop is kept at a constant 70° room temperature. The walls and floors are vacuumed daily and the floors waxed and buffed.

C & S has good reason for all this care. The two fuel injection pumps used on each of the Wright Cyclone 18-cylinder engines require the maintenance of very close internal tolerances, in some locations to 0.000005". Dust particles are not permitted to remain on any part, nor is the mechanic who does the work allowed to hold them in his hand at average room temperature.

Fuel injection pumps which are removed either prematurely or for periodic overhaul are first checked at the new test stand which is adjacent to the

workshop. The electrically operated stand tests the Bendix pumps at speeds ranging from 300 to 1400 rpm and under conditions duplicating those of an airplane in flight.

Nine individual burettes (glass tubes) correspond to the nine cylinders served by each pump, and the amount of fuel feeding into each must be equal. By measuring the pump strokes the test stand reveals whether a unit is functioning properly.

Battery Damage

A recent suggestion award at Western Air Lines returned \$40 to mechanic H. E. Eckhardt for eliminating battery and voltage regulator damage due to the unequal voltage of mixed batteries. Eckhardt's suggestion provides that batteries be kept in pairs throughout their service. Savings of about the cost of one battery a month have been realized.

Communication Fees Cut 50% by CAA

A revision of Part 612 of CAA rules scheduled to become effective September 1 will provide a 50% reduction in airline fees paid CAA for the use of communications facilities for other than safety and weather messages.

In the first year under the charge arrangement, CAA received approximately \$850,000 for Category B services, in which these messages are classed, and the reduction in rate should drop the annual payment about \$425,000.

The new scale provides a fee of 25 cents for each 10 words or portion thereof and the previous one dollar minimum fee has been eliminated. Higher traffic volume and lower operating costs than anticipated when the original rate was adopted are CAA's explanations for the change.

Roving Engineer Helps Lockheed and Customers

Keeping the customer happy and keeping the engineers informed is a two-edged problem that Lockheed has gone far toward solving by means of Carl Schmidt, its roving flight test engineer.



Schmidt tours the world's airlines helping purchasers of Lockheed aircraft deal with their problems, and feeding any new information back to Burbank for the benefit of Lockheed's future planning.

One carrier, working on Schmidt's suggestions, added 2,000 pounds to its normal payload by making a small change in its flight procedures and using more efficient engine power settings.

Channeling information in the opposite direction, Schmidt has given Lockheed accumulated data on icing conditions, gathered during his world tours, on the basis of which new operating procedures and new pieces of equipment have been devised.

USAF Work to Aerodex

An Air Force contract valued at \$1,500,000 for the reconditioning of a number of Douglas C-47 aircraft has been awarded Aerodex, Inc. The work will be completed at the company's base at Miami International Airport, Fla.

SEPTEMBER 1, 1952

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Get up and go—with a McCauley, the original and still the foremost metal propeller for light aircraft.

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one of the many champions who demand performance, durability and safety, insists on MET-L-PROP... you should, too!



Shure-built "SCOTTY" FOREMAN'S DESK

Built of Heavy Gauge Pressed Steel

Height 43½" to front of writing surface; suitable for stand-up use. Smooth box flanged top—34½" x 21¾" writing surface. Large roller type drawer with lock. Pigeon-hole top. Finish is high grade standard green baked enamel.

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Shipping Weight 100 lb.

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Light Landings for Heavyweights!

When America's biggest bomber, the mighty B-36, returns to the ground, the potential impact is terrific. Yet this leviathan of the skies lands with effortless ease because the shock is absorbed by Cleveland Pneumatic AEROL main landing gears.

It is indeed fitting that this great plane is equipped with AEROLS. Over a quarter of a century ago, Cleveland Pneumatic pioneered and perfected the air-oil strut. Its operating

principle has proved so successful that it has been almost universally adopted. Today, planes of every type and size land on Cleveland Pneumatic AEROLS.

Extensive plant and production facilities, combined with unexcelled "know-how", explain why Cleveland Pneumatic landing gear is recognized as *first in the field!*

The Cleveland Pneumatic Tool Company, Cleveland 5, Ohio . . . Established 1894.

CLEVELAND PNEUMATIC

First in the Field! Aircraft Landing Gear • Ball Bearing Screws • Actuators

More Radar Control Seen As Test Result

Means for the expanded use of radar control are provided in a recent notice given by the CAA of procedures developed from evaluation tests at Washington National Airport. Where such procedures are established, CAA Air Traffic Control will provide a minimum of three miles horizontal separation between aircraft arriving and/or departing on an instrument flight plan and all other known IFR traffic, unless other required separation, such as vertical, lateral, or longitudinal, exists.

The Air Line Pilots Association and the airlines are said to be agreeable to the expanded use of actual radar separation at additional locations for departures only where the need exists. Similar agreement is expected soon for its use in controlling arrival aircraft. At present, radar separation is practiced only at Washington, New York, and Los Angeles. Washington control concerns arrivals and departures; New York, departures only; and Los Angeles, arrivals and departures, except for scheduled air carrier operations.

Panagra Completes Engine Program

Pan American Grace Airways has completed the \$600,000 program to standardize on Pratt & Whitney R-2800-CB16 engines in its Douglas DC-6 aircraft. The conversion, which began in September, 1950, provides a 25 to 30 mph increase in the DC-6 cruising speed and a 5 to 10 mph increase over the Douglas DC-6B, also operated by Panagra.

Installation of Hamilton Standard model 43E 60 "high activity" propellers and provision for use of water alcohol injection on take-off were part of the program.

Panagra's most recent undertaking is a \$260,000 airborne radio modernization project.

Robin Accident Reveals CAA, CAB at Odds

The CAA's action in re-issuing Robin Airlines' operating certificate last December 18 was termed "difficult to reconcile" in the Civil Aeronautics Board formal report of the wheels-up landing of a Robin C-46 at Coburg, Ontario, which occurred two days after the CAA action.

Probable cause of the accident, in which all occupants escaped uninjured, was determined by CAB to have been

Ready for Hanging

First of a series of selected portraits of some very select members of the airline family, as seen by the eye of Richard E. Chamberlain.



THE RADIO OPERATOR: Always studying for higher grades of license although already holding dispatcher's ticket and pilot's license. Trained to give estimates of 30-second accuracy. When acting as a medium between pilot and ATC his diplomacy is out of this world.

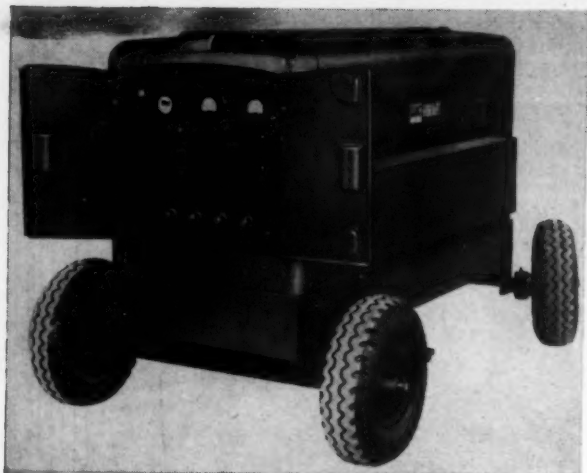
The artist who produced both of the above comments, graphic and literary, is an agent for Empire Air Lines (recently merged with West Coast Airlines) at Boise, Idaho, from which vantage point he has ample opportunity to create such character sketches. Before the non-radio-operators in the audience begin to feel too sure of themselves, we had better warn them that this is just the first in a series of such drawings which will bring almost everybody into the act. This all began when Chamberlain studied art in France for two months before his discharge from the Army in 1945. He followed that training with a year at the Art Institute of Pittsburgh, and has been with Empire for the past four years, the first three as a flight steward. Next issue: The Pilot.

"incompetence" of the crew in flight training and navigation, fostered by the failure of the company to check crew competency and provide proper flight training.

In one of the rare instances where the CAB has publicly criticized its sister agency, the Board reported that "in considering the past operating history of this air carrier, which has been in-

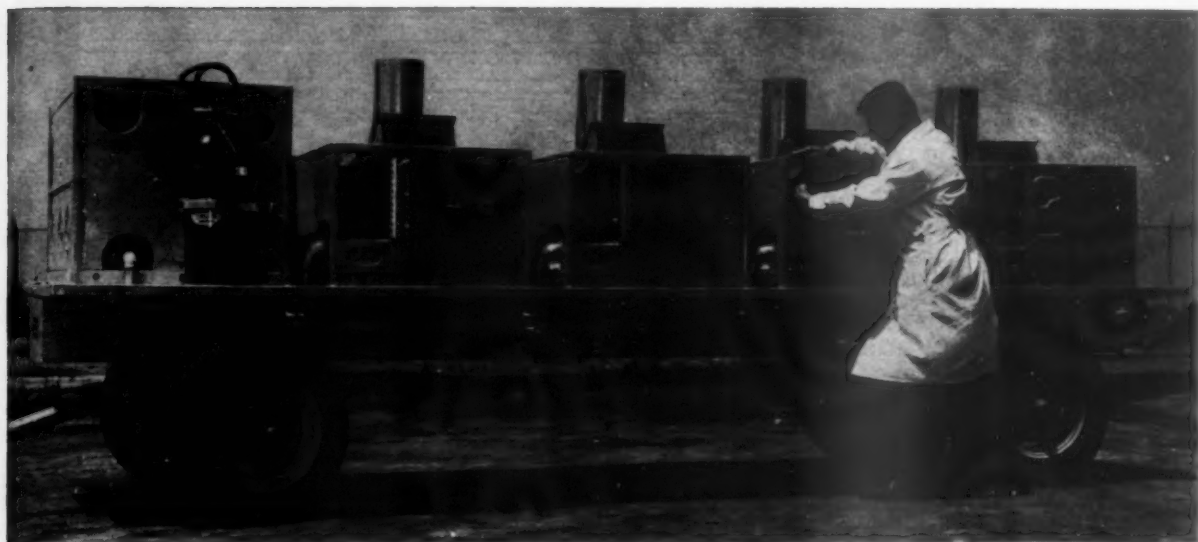
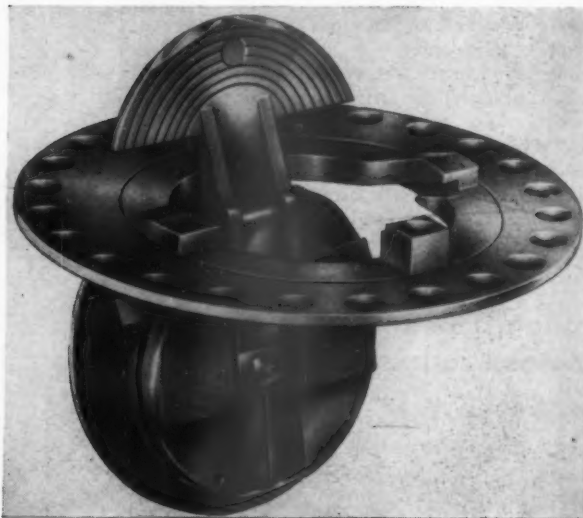
involved in continuous violations since the beginning of its operations, it is difficult to reconcile this action taken by the CAA."

According to the CAB, the CAA complaint which had been filed against Robin on March 5, 1951, and which allegedly involved safety violations of a serious nature, had never been adjudicated.



Motor generator frequency changer for testing instruments, radio, and radar systems has been introduced by the Motor Generator Corporation. Available as either portable or stationary unit, it includes a 50 hp motor which drives a 28-pole, 400-cycle generator at 1714 rpm insuring exactly 400-cycle output. Address: Motor Generator Corporation, Hobart Brothers Affiliate, Troy, Ohio.

Fuel tank filler cap, called Safe-T-Lock, utilizes internal tank pressure to assist in sealing. Flush mounted, it is designed to suit needs of high speed aircraft. Address: Gabb Special Products Division, The E. Horton & Son Co., Windsor Locks, Connecticut.



Ground power unit for starting engines of such aircraft as Boeing B-52 jet bomber is provided in AiResearch Manufacturing Company's new pneumatic power set. Four gas turbine compressors produce a combined output of 160 air horsepower at 400° F. Unit also powers aircraft's

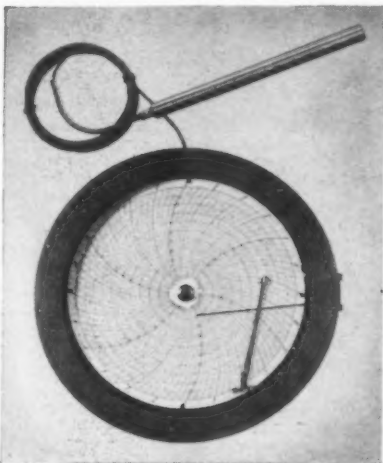
electrical and hydraulic accessories for ground operation when engines are not running. Photo shows set in operating position with air vents open and exhaust stacks extended. Both can be integrally stored when unit is not in use. Address: AiResearch Manufacturing Company, Los Angeles.

New Products

Spark Plug Sleeve

A non-breakable spark plug terminal sleeve introduced by the J. E. Menaugh Company, available with either beryllium or steel springs, is said to meet and exceed all electrical, chemical, mechanical, and material requirements outlined in specification MIL-S-5458A. It features operating temperature ranges from minus 100° F. to plus 500° F., won't chip or fracture, is free from burrs, and is non-tracking. "CONTACT" NON-BREAKABLE is about 30% lighter than ceramic terminal sleeves.

Address: J. E. Menaugh Company, 549 Washington Blvd., Chicago 6, Ill.

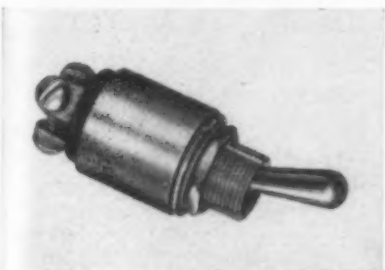


Recording Thermometer

A sub-zero recording thermometer for distant-reading use has been announced by the Dickson Company.

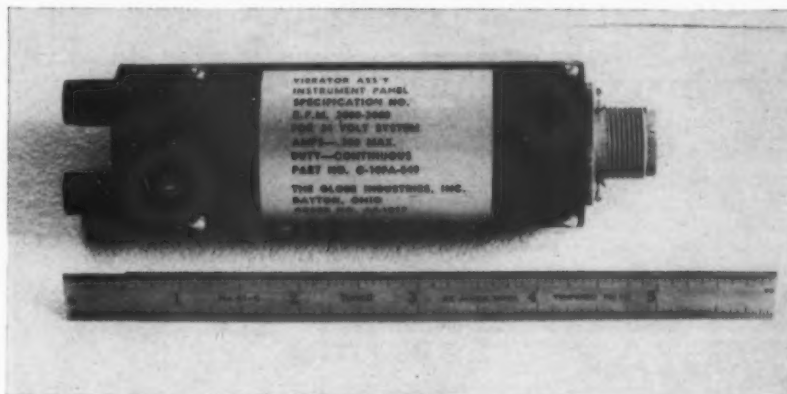
Designed for testing equipment under low temperatures, the instrument is available in several scales ranging from -200° F. to +200° F. Model PD is a dial-indicating unit and model NR provides a continuous time-temperature record on a 12-inch chart driven by a synchronous electric or spring-wound clock movement.

Address: The Dickson Company, 7420 So. Woodlawn Ave., Chicago 19, Ill.



Toggle Switch

A miniature cylindrical toggle switch for aircraft applications which has been made available by Heatherington Inc. is 25% smaller than conventional rectangular switches. Circuit arrangements available include "on-off" and S. P. D. T. maintained



Vibrator

An instrument panel vibrator now being marketed by Globe Industries, Inc., introduces vibration of a known frequency and amplitude into instrument panels to increase accuracy and prevent instrument "sticking."

Power for the continuously operating device is provided by a fractional horsepower

motor operating at any standard voltage. An unbalanced weight on the armature shaft provides vibration action at 2,000-3,000 cycles per minute. The unit weighs 10 ounces and incorporates integral wiring to eliminate radio interference.

Address: Globe Industries, Inc., 125 Sunrise Place, Dayton 7, Ohio.

contact types, and momentary-on or momentary-off and "On-momentary on" types.

Rated at 10 amperes, the new switch is designed to meet specification MIL-S-6745. Internal construction features positive cam-roller snap action, strong lever operating action, and an effective contact wipe. Contact surfaces are heavily silvered. Cam operation on a roller contactor reduces contact wear and arcing damage.

Address: Heatherington, Inc., Sharon Hill, Pa.

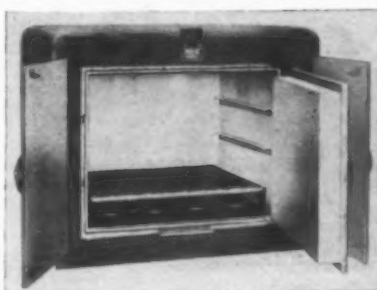


Sealed Relay

A hermetically sealed relay specifically designed for airborne electronic applications has been announced by the Advance Electric and Relay Co. Available in either S.P.D.T. or D.P.D.T. and designed to meet joint Air Force and Navy Spec. ANE-19, relay will withstand 10g vibration with a minimum available power of 500 milliwatts.

Dimensions are 3/4" x 15/16" x 1 13/32" high, and weight is 1.3 ounces. Contact material is either pure silver rated at 1 1/2 amperes, or palladium, rated at 3 amperes.

Address: Advance Electric and Relay Company, 2435 No. Naomi Street, Burbank, Calif.



Electric Oven

A portable electric oven, designated the Model HT-2, for baking, drying, and preheating parts has been introduced by the Grieve-Henry Co., Inc. It features Inconel-sheathed sealed tubular heating elements.

Constructed of heavy gauge steel with a minimum of four inches of Fibreglass insulation, the oven has a stainless steel interior. A thermostat control governs ranges from 300° F. to 1,000° F.

Outside dimensions are 30" wide x 25" deep x 24" high; inside, 22" x 18" x 16".

Address: Grieve-Henry Co., Inc., Chicago 22, Ill.

Windshield Sealer

A non-shrinking, moisture-proof sealer has possible aviation uses for sealing cockpit windshield leaks.

Produced by the Adhesives and Coatings division of the Minnesota Mining and Manufacturing Co., and designated EC-1167, sealer, the putty-like material remains permanently soft and serviceable in temperatures up to 200° F.

Address: Minnesota Mining & Mfg. Co., 411 Piquette Ave., Detroit 2, Mich.

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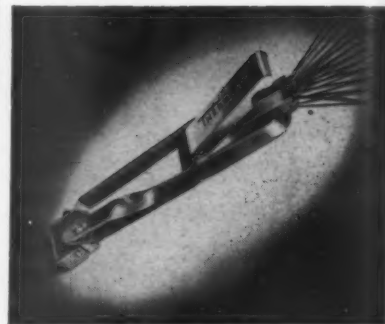
See your travel agent or call Trans World Airlines

Across the U.S. and overseas... you can depend on **TWA**

Hose Tool

A hose band and tool announced by the Squire-Cogswell Company can reportedly be applied anywhere with air, steam, water, or oil hoses and provide a tight, rustproof connection. Tools available in junior and senior sizes serve hoses below $\frac{3}{4}$ " and above 1" respectively. Bands are electro-galvanized and welded soft steel wire which, when installed, provide a small joint.

Address: Squire-Cogswell Co., 4140 North Kedzie Avenue, Chicago 18, Ill.

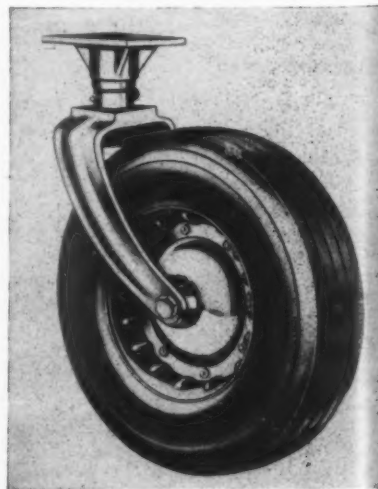


Spark Lighter

A combination welders' spark lighter and tip cleaner called TIP-O-LITERS has been placed on the market by the Thermacote Company.

Twelve spiral tip cleaners, guaranteed against breakage, are attached directly to the handle of a three-flint spark lighter, providing one handy tool.

Address: Thermacote Company, 301 Mount Pleasant, Newark, N. J.



Casters

Rubber tire casters in either the swivel or rigid types have been introduced by the Goddeyne Wheel Products Company.

Ratings range from 90 pounds for the 6" wheel to 625 pounds for the 16" wheel. Casters are of welded construction and tires are semi-pneumatic or solid rubber, depending on load requirements. A heavy duty ball bearing absorbs caster loads and tapered roller bearing are provided for side thrust. Bolted construction of

wheels permits quick disassembly and inexpensive replacement of damaged or worn tires.

Address: Goddeyne Wheel Products, 1300 N. McLellan St., Bay City, Mich.



Tax Computer

A tax computer for the airline treasury department offered by the Ayres Corporation gives direct tax deduction readings and F.O.A.B. deductions on a single line. Drums are interchangeable for weekly, bi-weekly, or semi-monthly periods.

Address: Ayres Corporation, Box 1081, Wilmington, California.

Windshield Sealer

A non-shrinking, moisture-proof sealer originally introduced in the automotive industry has possible aviation uses for sealing cockpit windshield leaks.

Produced by the Adhesives and Coatings division of the Minnesota Mining and Manufacturing Co., and designated EC-

1167 sealer, the putty-like material remains permanently soft and serviceable in temperatures up to 200° F. Application can be made by hand, putty knife, pressure, or screw-type extruding equipment.

Address: Minnesota Mining and Manufacturing Co., 411 Piquette Ave., Detroit 2, Michigan.

New Wire

A new wire meeting Air Force requirements for use in contact with Skydrol hydraulic fluid has been announced by B. F. Goodrich Chemical Co. It features a polyvinyl chloride plastic primary insulation and a nylon jacket extruded on the wire, offering resistance to cold weather (minus 34° C.), oil, grease, abrasion, and flame.

Address: B. F. Goodrich Chemical Co., 324 Rose Bldg., Cleveland 15, Ohio.

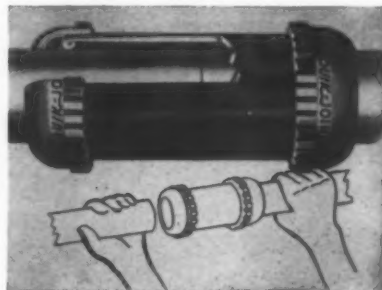
Non-Electric Soldering

A soldering iron which requires no electrical or other external heat source, called the "Quik-Shot," has been introduced by the Kemode Mfg. Co. Inc.

Suitable for all kinds of soldering work where electric power is not convenient such as troubleshooting fire detector system malfunctions during line service operations, the Quik-Shot uses a chemical cartridge as a source of heat. Current use is reported on Capital Airlines, Trans World Airlines and Pan American World Airways.

Iron heats to 800° F, working temperature in 10 seconds and maintains it for seven minutes. Safety provisions include freedom from electric shock and fire hazard. Five interchangeable tips ranging in size from 3/8 to one inch are available.

Address: Kemode Mfg. Co. Inc., 161 West 18 St., New York 11, N. Y.



Pipe Coupling

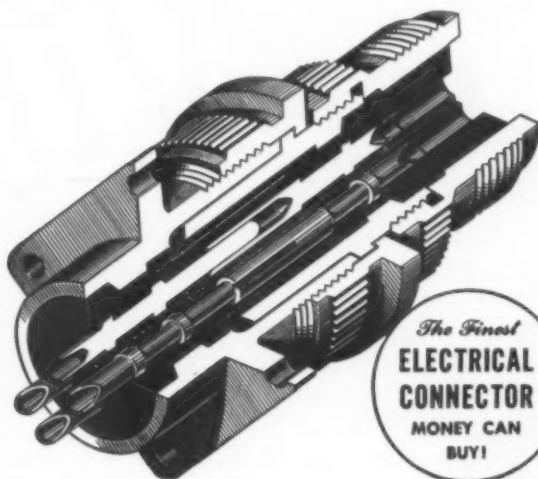
A pipe coupling which involves no thread cutting and can be installed in less than a minute is offered by the Quik-Joint Manufacturing Company. Useable with gas, water, air, or oil lines, the Quik-Joint coupling withstands working pressures up to 2000 psi.

Piping to be connected is merely inserted into the ends of the coupling and the lock nuts tightened the desired amount. Available sizes range from 1/2" to 1 1/2" in straight couplings and 45° or 90° elbows.

Address: Quik-Joint Manufacturing Co., 469 East 159 St., Harvey, Ill.

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When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of -67°F to +275°F. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.



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Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.
FACTORY BRANCH OFFICES: 118 E. Providence Ave., Burbank, Calif. • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Michigan • Brower Bldg., 176 W. Wisconsin Avenue, Milwaukee, Wisconsin • 882 Market Street, San Francisco 4, California



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Large well placed windows give the Chase Assault Transport pilot unobstructed vision as he comes in for a forward area landing.

Delivery of heavy ordnance, transport of personnel and evacuation of wounded from advanced combat zones, without benefit of airstrip or prepared landing field, is routine for the rugged Chase C-123.

Designed and developed specifically to withstand the gruelling punishment of combat zone missions, the Chase Assault Transport stands unchallenged in this field.



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Technical Literature

FACILITIES: "Performance Pattern" prepared by de Garmo, Inc., of New York City, describes the facilities and services of Aircraft Engine & Parts Corp. and its subsidiary, American Air Service. The 12-page, well illustrated brochure is available through Aircraft Engine & Parts Corp., 345 Madison Ave., New York 17, N. Y.

LOCKNUTS: A new 24-page brochure published by the Locknut Section of Industrial Fasteners Institute, 3648 Euclid Ave., Cleveland 15, O., describes and illustrates the most effective use of locknuts, detailing principle of operation of representative types.

THREAD GAUGES: Bulletin SG-52 lists prices of standard thread gauges manufactured by the Detroit Tap and Tool Co., 415 Boulevard Building, Detroit 2, Mich.

VANEAXIAL FANS: "Axivane" Fans for cooling airborne or ground-located electronic equipment are discussed in Bulletin J-612 and can be obtained from the Joy Manufacturing Co., Henry W. Oliver Building, Pittsburgh 22, Pa.

O-RINGS: Data and dimensions for precision O-rings molded of Parkone compounds for extreme temperature resistance are set forth in catalog 5160A1, available from The Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, O.

LOUDSPEAKERS: New 20-page, two-color catalog describes Jensen's high-fidelity speakers, two-way system components, and cabinets. It is distributed by Jensen Manufacturing Co., 6601 S. Laramine, Chicago, Ill.

PROTECTIVE DEVICES: Bulletin SC-1006 titled "Selas Automatic Fire Checks and Safety Blowouts—Combustion Safeguards" describes the two protective devices used in piping systems of gas-and-air combustion systems. It was prepared by Selas Corp. of America, Philadelphia 34, Pa.

ELECTRICAL CONTACTS: A 12-page catalog, C-520, contains data on the properties and uses of electrical contacts made by the Gibson Electric Co., Frankstown Ave., Pittsburgh 21, Pa.

STANDARD DIES: Federal Machinery Co., 134 Grand St., New York 13, N. Y., has prepared a 32-page standard die catalog to be used in sheet metal fabricating shops for quick reference.

FILMS

FUEL KNOCK: A 30-minute sound movie, issued by Ethyl Corp., 106 Park Avenue, New York 17, N. Y., provides information on the basic "hows and whys" of fuel knock. "Fundamentals of Fuel Knock" is a motion picture progress report on combustion research being carried out at the Sloan Laboratories of the Massachusetts Institute of Technology under Ethyl's sponsorship.

Another First for Allison

1,000,000 hours in the air for J33 Turbo-Jet engines

Allison jet engines were the first to accumulate a million hours in the air. Now Allison J33 jets *alone* have surpassed this figure. In addition, Allison J35 engines are fast approaching the million-hour mark.

Records like these are further proof that Allison leads the world in experience—where it counts most—in the air!

Thousands of hours on the Allison J33 are being accumulated in Lockheed Shooting Stars on tank-busting sorties behind enemy lines in Korea.



Designers and Builders of J35 and J71 Axial, J33 Centrifugal Turbo-Jet Engines, T38 and T40 Turbo-Prop Engines



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The "Islander"

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Airline Commentary

By Eric Bramley



WE RECENTLY COMPLETED a one month's trip to Alaska, during which we visited with almost all of the airlines serving the Territory. We traveled some 7,000 miles inside Alaska, and the over-all trip covered 15,000 miles. You'll be hearing more about it in future issues.

Two of the places visited were of unusual interest because most people who go to Alaska don't get to them. One was the Pribilof Islands, 330 miles out in the Bering Sea, off the Aleutian Chain, via Reeve Aleutian Airways. The other was Point Barrow, 350 miles north of the Arctic Circle, via Wien Alaska Airlines. This is said to be the northernmost point served by a scheduled airline. When you get to Barrow brother, you've gone about as far as you can go. There's nothing to the north but a little open water (in July) and then ice. The North Pole's only 1,100 miles away.

The Pribilofs are also out at the end of nowhere. Next stop, if you went far enough, would be Siberia, where, we are told, visitors aren't greeted with open arms, and your stay may be a lengthy one. The Alaska fur seals migrate to the Pribilofs every year to bear their young and to breed. This is also where they are killed, so that you ladies can have those beautiful \$5,000 fur coats. It's a once-in-a-lifetime sight to see over 1,500,000 seals on one island.

Since our return, the people who haven't yet discovered Alaska have been asking us with great regularity what the Territory has to offer tourists, and what the weather's like. The answer to the first question is beautiful scenery, equaled in few other places. There are lots of places to go and lots of things to see. The fishing is excellent.

But don't expect to stay at the Waldorf. As we've stated before, Alaska isn't prepared yet for a big influx of tourists. You may end up in a hotel that's not exactly what you were looking for. But don't let it bother you. A lot of people are in the same boat. As a matter of fact, a couple of them may be in the same room with you. Anyway, from Ketchikan in the southeast to the Pribilofs on the west, and the Arctic Circle on the north, there are different things to see and do. Go fishing, watch the gold mining, go to Mt. McKinley, the Pribilofs, etc. The airlines serve all the places you'll want to go.

About the weather and general conditions. The adjoining picture shows us on St. Paul Island, in the Pribilofs, in mid-July. Our blood is thin from 15 years in Washington, and we were slowly freezing to death until we donned the parka. Early that day, according to one of the natives, the temperature was in the high 30's, later going into the low 50's. The pained expression was caused by the high wind and cold rain. But it's a lot of fun—a trip that shouldn't be missed.

In Anchorage, the hottest day of the year had been 79. In Fairbanks, the thermometer sometimes reaches 90 (it also drops to 50 below in winter). In Barrow, it was in the 40's the day we were there, and a few days earlier there had been snow flurries.



A million Btu per hour! That's the total capacity of the six Janitrol heaters aboard this brilliant new transport. "Comfortization" of the cabin is provided by two Janitrol S-100 heaters from which warm air is ducted to individual outlets for the passengers. The same heaters also warm the cockpit and provide windshield anti-icing. In addition, four S-200 heaters are installed in the engine nacelles for wing, vertical stabilizer, and tail surface de-icing. All four of these

heaters are connected by ducts to a common plenum located beneath the cabin compartment from where heat is directed to the wing and tail surfaces. Eastern and TWA, like most airlines, have had long experience with Janitrol combustion heaters which led them to specify "Janitrol" with full confidence in their dependability, performance, and economy. Consult your Janitrol representative on any problems concerning heat—wherever you want it.

NEW STORY

Eastern and TWA specify Janitrol heat in the Martin 4-0-4

OLD TWIST

Janitrol now standard equipment in the 4-0-4, as on scores of leading commercial and military aircraft.



AIRCRAFT AND AUTOMOTIVE HEATERS *with the whirling flame*



Janitrol

AIRCRAFT-AUTOMOTIVE DIVISION SURFACE COMBUSTION CORP., TOLEDO 1, OHIO

F. H. Scott, New York, N. Y., 225 Broadway; C. B. Anderson, Ft. Worth, Tex., 2509 W. Berry St.; Lee Curtin, Hollywood, Calif., 7046 Hollywood Blvd.; F. H. Scott, Washington, D. C., 4650 East-West Highway; Frank Deak, Phil Miller, Gen. District Office, Engineering Development & Production, Columbus, O.; Hdqrs., Toledo, O.

SEPTEMBER 1, 1952

U. S. International Airline Revenues and Expenses for May, 1952

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U. S. MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUNDS & INDIRECT EXPENSES	NET OPERATING INCOME (LOSS)
American	445,181	366,293	11,090	8,363	277	34,162	5,967	4,953	477,090	262,078	215,012	-31,909
Braniff	698,578	464,755	168,270	12,802	.....	36,088	12,402	.....	810,776	378,353	432,023	-111,798
C & S	409,114	215,962	154,439	1,216	.....	22,594	10,930	.....	303,732	140,653	163,079	-103,382
Colonial	161,201	151,095	5,184	1,090	.....	1,439	937	.....	152,766	98,172	94,594	8,435
Eastern	659,963	510,595	21,945	.....	.....	8,295	7,762	111,328	491,619	300,590	191,029	168,344
National	114,925	107,144	915	.....	1,180	4,296	1,390	.....	173,080	52,155	120,925	-58,155
Northwest	1,462,991	778,149	429,906	56,308	4,967	174,445	8,932	.....	1,676,575	732,506	942,069	-211,584
Panagra *	1,206,576	968,962	51,900	45,450	.....	91,427	33,137	-184	1,399,178	640,357	718,821	-152,602
PAA	4,894,112	3,390,230	602,250	123,402	.....	573,245	89,603	44,976	6,171,416	2,621,896	3,549,520	-1,277,304
Latin Amer.	5,942,253	4,216,388	901,490	192,637	.....	426,891	85,840	104,332	5,455,017	2,720,130	2,734,887	487,236
Atlantic	3,595,255	2,204,472	980,117	80,001	.....	244,214	34,777	15,008	3,038,132	1,738,217	1,299,817	557,121
Pacific	578,319	342,961	97,340	.....	.....	104,012	3,750	29,977	542,990	258,635	284,355	35,329
Alaska	4,007,451	3,033,983	322,425	264,920	.....	251,982	61,808	43,195	3,948,862	1,716,648	2,232,214	58,589
TWA	753,567	663,727	62,897	.....	.....	16,890	3,572	.....	788,223	451,503	336,720	-34,656
United	24,929,486	17,414,696	3,810,168	786,149	6,424	1,989,590	360,827	353,565	25,387,058	12,071,993	13,315,065	-457,572
TOTALS												

* U.S. mail pay accrued on basis of temporary mail pay rate order of October 17, 1951.

NOTES: 1. Schedules were curtailed during May because of nationwide gasoline shortages.
2. Data in above tabulations were compiled by American Aviation Publications from monthly reports filed by the airlines with the Civil Aeronautics Board. Data are tentative and subject to later change.

Summary of U. S. International Airline Traffic for May, 1952

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	U. S. MAIL TON-MAILS	FOREIGN MAIL TON-MAILS	EXPRESS TON-MAILS	FREIGHT TON-MAILS	TOTAL TON-MAILS	AVAILABLE TON-MAILS	% AVAILABLE TON-MAILS USED	REVENUE PLANE MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
American	10,357	7,834,000	13,143,000	59.61	15,207	4,025	704	161,831	1,000,018	1,816,114	55.06	253,739	249,905	97.45
Braniff	2,538	6,186,000	14,395,000	42.39	45,586	1,600	.....	130,501	873,677	2,104,099	42.32	343,932	366,070	93.95
C & S	2,497	3,027,000	6,332,000	47.80	4,682	686	.....	82,078	404,288	884,538	45.71	128,752	128,752	100.00
Colonial	3,597	2,796,000	3,516,000	79.52	819	387	.....	5,260	302,342	422,656	71.53	67,625	65,859	100.00
Eastern	9,668	14,288,000	20,433,000	69.93	48,766	.....	.....	38,094	1,527,527	3,594,119	42.30	344,241	258,047	93.57
National	6,523	1,684,000	3,648,000	46.16	1,388	.....	3,894	18,354	194,527	456,027	42.66	64,398	64,668	98.55
Northwest	6,543	10,755,000	19,652,000	54.73	103,168	36,276	20,652	617,624	1,926,633	3,130,767	61.54	509,456	500,873	98.80
Panagra *	8,333	10,750,000	19,514,000	55.09	34,427	24,195	.....	191,906	1,447,935	2,693,682	53.79	497,737	498,479	99.00
PAA	59,143	56,743,000	98,468,000	57.63	269,957	66,559	.....	1,831,019	7,711,193	12,820,704	60.15	2,219,331	1,803,960	98.59
Latin Amer.	34,394	54,206,000	76,104,000	71.23	440,531	129,035	.....	1,198,464	7,615,470	10,230,940	74.44	1,349,222	1,265,386	98.88
Atlantic	8,496	28,888,000	40,499,000	71.33	339,391	59,417	.....	571,557	4,150,552	6,952,869	99.70	821,681	811,607	99.47
Pacific	5,576	6,140,000	13,395,000	45.84	39,816	.....	.....	508,123	1,195,358	2,225,721	53.71	316,198	289,685	99.66
Alaska	13,767	37,342,000	45,425,000	82.21	290,886	134,546	.....	470,575	4,994,845	5,370,664	93.00	980,167	978,476	96.65
TWA	4,853	12,002,000	14,064,000	85.46	82,946	.....	.....	62,401	1,406,944	1,929,420	72.92	265,896	248,938	100.00
United	176,285	252,641,000	388,768,000	64.98	1,717,970	456,726	25,250	5,887,887	34,751,309	54,632,320	63.61	8,162,275	7,530,903	98.21
TOTALS														

* Includes air parcel post.

NOTES: 1. Schedules were curtailed because of nationwide gasoline shortage during May.
2. Figures include both scheduled and non-scheduled operations.
3. Data in above tabulations were compiled by American Aviation Publications from monthly reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for Braniff to South America; C & S to South America; Colonial to Bermuda; Eastern to Puerto Rico; National to Havana; Northwest to Orient and nonstop to United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.

Summary of U. S. Local Service Airline Revenues and Expenses for May, 1952

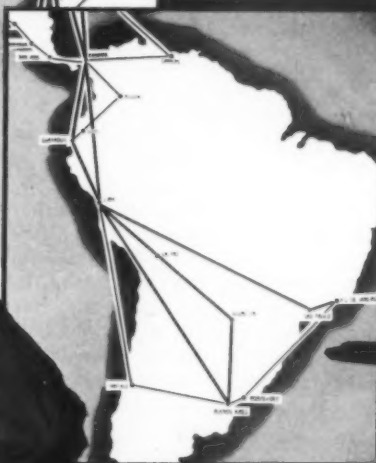
AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUNDS & INDIRECT EXPENSES	NET OPERATING INCOME (LOSS)
All American	292,577	137,521	138,101	6,697	.....	657	8,175	321,021	148,883	172,138	-28,444
Bonanza	104,407	51,864	50,085	74	847	582	97	104,614	51,508	53,106	-207
Central	77,382	32,197	79,011	437	1,195	693	923	183,525	83,999	99,526	-106,143
Empire	97,282	44,524	48,632	2,168	.....	271	1,364	84,356	43,221	41,135	12,926
Frontier	412,373	141,296	253,526	2,308	11,851	1,065	970	395,801	181,386	214,415	16,572
Lake Central	177,360	31,408	134,240	1,864	.....	206	817	112,230	47,311	64,919	65,130
MCA *	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mid-West	256,074	99,291	183,323	2,799	.....	469	.....	238,235	129,139	109,076	17,839
Oark	334,368	257,834	66,435	2,845	3,653	1,853	931	330,528	168,747	161,781	3,840
Piedmont	329,381	277,304	80,204	1,789	5,676	2,371	.....	325,401	143,757	181,644	3,980
Pioneer	152,615	84,822	62,165	2,302	611	267	2,283	151,712	77,160	74,552	903
Robinson	231,815	97,685	129,342	3,647	.....	572	210	258,798	132,174	126,624	-36,981
Southern	222,315	162,905	49,795	1,921	3,666	540	.....	233,287	102,736	130,551	-10,972
Southwest	223,214	73,247	140,582	1,015	2,381	396	4,598	218,342	94,146	123,996	5,072
Trans-Texas	120,739	72,591	42,640	613	1,714	244	2,626	103,174	41,685	61,289	17,565
West Coast	26,140	1,667	24,089	230	.....	5	123	23,324	7,920	15,404	2,816
Wiggins	257,869	121,266	130,756	5,129	.....	544	.....	264,309	133,079	131,230	-32,544
TOTALS	3,315,911	1,617,422	1,612,926	35,838	31,594	10,735	23,117	3,348,457	1,587,071	1,761,386	-32,544
Helicopter Mail Service	43,955	.....	44,218	.....	.....	.....	.....	33,578	18,915	14,663	10,376
Los Angeles	25,452	.....	25,392	.....	.....	.....	.....	34,157	19,545	14,612	-8,705

* Company did not file separate financial report covering operations of domestic local service route. Combined figures covering trunk and local service operations appear on domestic financial summary sheet.

NOTES: 1. Schedules were curtailed during May because of nationwide gasoline shortages.
2. Figures are taken from monthly reports filed by the airlines with CAB. Data are tentative and subject to later change.



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AIRLINES
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it means your passengers can now enjoy the combined skill, experience and facilities of two of America's leading airlines.

it means fast efficient service for 64 key midwestern cities and well-timed connections to every major city in the U.S.

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it means you'll find throughout the heart of America the superb cabin service and friendly transportation that makes such a difference.

it means you have 139 Braniff offices in the Western Hemisphere to help out with information and international documentation — and one central control for instant reservations.

it means from Canada to the Gulf, from the Rockies to the Mississippi, throughout Latin America one-company service all the way.

SUGGEST BRANIFF for anywhere inside U.S.A. or Latin America, and for additional information contact your Braniff office or Braniff International Airways, Love Field, Dallas, Texas.

Delta Gets \$20 Million from Banks

The estimated bright financial outlook for a merged Delta-Chicago and Southern system was further enhanced last week when 25 southern banks extended a \$20,000,000 credit to Delta. Described by the banks as "the largest single credit ever transacted by southern banks" the credit is available for Delta to draw on in any amounts up to the total over a two-year period.

The money may be used for equipment, expansion generally, or both. It was the second major financial deal of the week for Delta. Two days prior to the loan, a new issue of 100,000 shares of stock was over-subscribed on the first day of offering, netting the carrier \$2,250,000. This was originally designed for financing of Delta's Convair and DC-7 orders.

But company officials indicated the additional money will be available for the needs of Delta and C&S in the event the merger is consummated. In fact, C. E. Woolman, Delta president and proposed president of the merged company, said that an additional 100,000 shares of stock will be offered for public sale "sometime next year" if the merger goes through.

Availability of extra cash wasn't the only reason officials of the merging companies were happy. In deciding on the loan, the 25 southern banks had before them the same *pro forma* capital structure of the merged company as now before CAB in the merger case. If a "jury" as tough as 25 banks thinks it to be a sound set-up, there is room for optimism in the CAB case.

Heacock Asks Revocation Order Suspension

Faced with revocation of its letter of registration by the Civil Aeronautics Board and affirmation of that decision by the courts, Air Transport Associates has asked CAB to suspend outstanding revocation orders pending outcome of the large irregular carrier investigation. It was one of several maneuvers by Amos E. Heacock's non-scheduled line to stave off revocation.

CAB has found the carrier guilty of violating provisions of the Civil Aeronautics Act and regulations. The U. S. Court of Appeals for the District of Columbia Circuit affirmed the decision two months ago. But Heacock managed to secure a continued stay of the CAB decision pending either rehearing by the Appeals Court or review by the U. S. Supreme Court.

Meanwhile, CAB has denied another of Heacock's bids. A proposal to operate intra-Alaska services between Anchorage and Fairbanks, prohibited by Board regulations, was turned down because CAB could not see a need for the additional services.

Discount Hearings Promised to Trunks

The domestic trunk airline industry has been assured of separate and early hearings on its proposal to eliminate round-trip discounts. Ruling on motions to divorce the case from CAB's general passenger fare investigation, the Board upheld airline arguments that a

consolidated proceeding would embrace too long a period of time.

Airlines proposed to drop the 5% round-trip discount last April when they also upped passenger fares by \$1. CAB, at that time, suspended the round-trip tariffs and ordered an investigation. Airlines contend approximately \$12 million annual revenues are involved in the proposal and that a delayed proceeding may prove harmful financially.

Agreeing in part with these arguments, CAB indicated it hopes to complete the case by December 18, which is the expiration date of the order suspending the round-trip tariffs.

CAB Examiner Urges Alaskan Proceeding

The Civil Aeronautics Board has been urged by one of its examiners to initiate a proceeding covering all of interior Alaska and putting in issue the entire route system of each carrier in the area. In this way, Examiner F. Merritt Ruhlen said, the Board would be in a position to realign the routes to conform to Alaska's present needs.

Ruhlen should be an authority on the subject, for he has just completed four complex cases involving modification of various routes in the area. But because none of the cases were designed to be an overhauling of the Alaska route structure, probably none of the modifications recommended will satisfactorily meet the needs of the national defense, commerce and the Postal Service, he said.

One possible solution, the examiner told CAB, might be to rearrange the

bush route authorizations in such a manner that each area would be served by only one carrier, and to establish trunk routes between the various areas with a minimum amount of duplication.

Following an examination of the Alaskan route structure by the Board's staff, the Board could, he said, order the carriers to show cause why their certificates should not be amended in such a manner as the Board deemed desirable. The carriers and other parties would then be allowed an opportunity to submit counter-proposals.

Empire Merger Over

Merger of Empire Air Lines into West Coast Airlines, through a stock purchase arrangement, was officially completed recently when the physical stock transfer took place and CAB issued a consolidated certificate in West Coast's name. New certificate is effective through September 30, 1954.

NEW CAB DECISIONS

• **Trans World Airlines** certificate for transcontinental Route 2 amended to remove restriction which prohibited service on the same flight to Santa Fe and Albuquerque.

• **British Overseas Airways Corporation** issued foreign air carrier permit formerly held by Bahamas Airways, Ltd., for service between the Bahamas and Florida.

• **Transportes Aereos Nacionales, S. A.**, the Honduras line, issued amended permit designating San Pedro Sula, Honduras, as a co-terminal point with Tegucigalpa on the carrier's Honduras-Florida route.

CAB CALENDAR

Sept. 3—Hearing in Large Irregular Air Carrier Investigation. Washington, D. C. (Docket 5132 et al.)

Sept. 3—Hearing in Reopened North Central Route Investigation. Washington, D. C. (Docket 4603 et al.)

Sept. 4—Oral argument in CAA vs. Robin Airlines d/b/a North Continent Airlines. Washington, D. C. (Docket SR-6-427).

Sept. 8—Hearing in Wichita Falls-Dallas Service Case. Washington, D. C. (Docket 3094 et al.).

Sept. 9—Oral argument before the Board in Pan American Grace Airways Mail Rate Case. Washington, D. C. (Docket 2755).



BEECHCRAFT TWIN BONANZA

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much easier for you and your company.

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THE HORNBLOWER OF KANO warns runway workers of the movements of aircraft on what may become one of the world's most heavily used jet airports. He rides one of a pair of camels which were presented by the Emir of Kano.



RUNWAY is readied for bitumen surfacing by rollers.



CARRIERS, oldest transport form, cross jet runway.



TERMINAL above which is to be replaced by larger one. At right, aerial view of Kano, one of the oldest walled cities.

Africa Gets Ready for Jets

THE INAUGURATION of BOAC's Comet service to Johannesburg spurred the creation of the first jet airport in Africa at Entebbe (AMERICAN AVIATION, March 3). Now the city of Kano in Northern Nigeria is making major additions and improvements on its airport to accommodate jet traffic. It will offer serious competition to Entebbe, and perhaps become an African Gander, since the distance from London to Johannesburg is about the same via either Entebbe or Kano, and the Kano route avoids a somewhat hostile Cairo.

A new 8,600-foot runway is nearing completion at an estimated cost of under \$840,000, with approaches at both ends unobstructed for 50 miles. The small terminal presently at the field will give way to a new building which the Nigerian government is making large enough to be adequate for the greatly increased traffic expected in the next 25 years, at a cost of \$750,000. It should be completed in late 1953.



People

OPERATIONS

Thomas J. Townsend, 10-year veteran with Pan American World Airways, has become special assistant to the operations manager of the Latin American division in Miami, Fla. . . .



Boyle



Townsend

John C. Boyle appointed assistant maintenance manager for the Pacific-Alaska division with headquarters in San Francisco. **T. R. Hiatt** succeeds to Boyle's former post of shop superintendent.

Victor H. Heintz has become Western Air Lines' station manager at Mankato, Minn., transferring from Yuma, Ariz., with the company's suspension of service there.

ADMINISTRATIVE

Jesse M. Childress, general manager of Southern Airways' fixed-base operation in Atlanta, elected a vice president of the company.

Norman MacDonald named by Colonial Airlines as acting treasurer, replacing **James F. Gormley** who resigned to take a position with the Ward Baking Co. of N. Y. **Thomas A. Campo** has been appointed assistant treasurer succeeding MacDonald.

Earl E. Jochim appointed as comptroller and chief statistician for Bonanza Air Lines.

Junius H. Cooper, Chicago & Southern Air Lines' vice president-finance, elected president of the Memphis Controller of the Controllers Institute of America.

TRAFFIC & SALES

Harley F. Emerson named European sales director for Northwest Airlines with headquarters in London. **J. Quinn Collier** has replaced Emerson as NWA d.s.m. at Milwaukee, while **Loyal L. Likens** succeeds Collins as d.s.m. in Pittsburgh.

Charles Faendrick, formerly Chicago district manager for Scandinavian Airlines System, has been appointed

manager-agency sales with offices in the company's New York headquarters.

Dan Bates, former d.s.m. for Philipines Air Lines at Seattle, has completed two years service as security officer at the U.S. Naval Supply Depot, Guam, and rejoined P.A.L.'s sale organization in San Francisco.

Hugh F. Jacox has returned to Capital Airlines from military leave of absence and been assigned to sales promotion work in the southern cities on the company's system.

Alfred M. Nelson, formerly sales manager for Pan American World Airways in Australia and in Shanghai, names sales representative for Western Air Lines in Oakland, Calif.

Victor E. Moore, supt. of the American School of Rio de Janeiro for the past eight years, appointed assistant to **Dr. John Furbay**, Trans World Airlines air education manager.

MERGER

With Braniff Airways as the surviving company of the Braniff Mid-Continent Airlines merger, some 21 officers, supervisors, and general office personnel of MCA are now moving to

the Dallas, Texas, headquarters of the new combine. Included in those transferring from MCA's headquarters in Kansas City, their former titles, and new assignments in Dallas, are:

• **J. W. Miller**, MCA president, becomes a vice president and a director.

• **John A. Cunningham**, MCA v.p.-operations, becomes assistant operations mgr.

• **W. L. Walker**, MCA treasurer, becomes director of economic controls.

• **V. A. Kropff**, ass't to MCA president, becomes administrative staff assistant.

• **Rex Aber**, MCA mgr.-reservations and ticketing, becomes mgr.-reservations procedures.

• **Glenn M. Wilson**, MCA chief reservations agent, becomes one of two regional reservations managers.

• **James F. Bowers**, MCA supervisor of schedules, joins Braniff's schedules and tariffs department.

• **A. W. Burgess**, MCA ass't dir.-industrial relations, becomes an assistant to Braniff's personnel director.

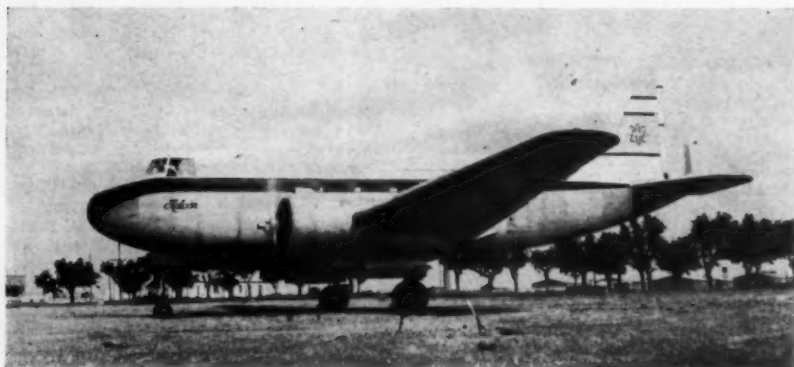
• **Jack W. Seay**, MCA mgr.-ground operations, becomes regional mgr.-ground operations, division No. 4, at Dallas.

In another move, **L. I. McKenzie**, ass't to the treasurer of MCA, transfers to Twin Cities to handle treasury functions of the enlarged company at the Twin Cities maintenance base.



NWA 20-Year Club Dinner. Forty-six Northwest Airlines employees were honored, recently, at the first annual "20 Year Club" dinner at the St. Paul Athletic club. Coupled with the dinner was the presentation of a 20-year pin to Croil Hunter, NWA president and general manager, who joined the company in 1932. Twenty-year club members and honored guests attending the dinner were, left to right, around outside R. E. Middlestaedt, John Rosbach, Walter Kollath, L. S. "Deke" DeLong, A. T. Petersen, L. E. Koerner, Frank Toll, Nels Larson, Cecil Cahoon, Croil Hunter, Bob Fitzsimmons, L. S. Holstad, William Stern, Lee Smith, Bert Ritchie, T. N. Hillis, E. I. Whyatt, John Vars, Amos Culbert, Joe Kimm, Malcolm S. Mackay, and M. E. Anderson. Left to right, inside of table, Reuben Petersen, Clarence Opsahl, Manfred Boe, Henry Walstrom, Ted Sundberg, Clarence Magnuson, Alex Lemenager, Carl Luethi, Paul Fenske, Jens Knudson, Bill Frazer, Bill Hoffman, Vern E. Johnson, R. E. Stelzig, Linus C. Grotzbach, Joe Schuster and Slim Cady. 20-year club members not present when the picture was taken include George Benson, Mal Freeburg, Ben Foster, Alvin Opsahl, Joe Ohrbeck, Russell McNowen, Charles L. Smith, Emil Heideck, Walter Bullock, Hubert Rueschenberg, William Peterson and Russell Sorkness.

International Report



CASA 202 was Construcciones Aeronauticas' first transport venture. The prototype started its flight test program this spring.

CASA 202 Prototype Flight Tested

Construcciones Aeronauticas is currently flight testing the prototype of the CASA 202 Halcon twin-engine medium transport. Powered by two Spanish 750 hp Elizalde B.1A engines, the plane can accommodate up to 18 passengers. Maximum gross weight is 16,500 pounds with a maximum useful load of 6,260 pounds. At 70% power the Halcon

cruises at 185 mph.

The new aircraft is the first of a small experimental series of CASA 202's which will enable Construcciones Aeronauticas to gain experience in building modern transports prior to starting the construction of the CASA 207 (a larger, pressurized 202) and the CASA 208 (AMERICAN AVIATION, August 18).

Aer Lingus, KLM Show Helicopter Interest

Interest in rotorcraft is increasing in Europe: Aer Lingus and KLM Royal Dutch Airlines are reported interested in joining the ranks of helicopter operators.

KLM is negotiating with the Sikorsky Division of United Aircraft Corp. for two S-55's to operate experimental services (a twin-engine helicopter would be required for scheduled domestic operations). Military commitments however, may prevent KLM from obtaining the S-55's by the desired date—1953. Another complication is the Dutch airline's requirement for the Wright Cyclone 7, a more powerful engine than the Pratt and Whitney Wasps fitted in the S-55's supplied to the USAF.

Aer Lingus, Ireland's flag carrier, is also interested in obtaining helicopters for domestic operations and has been in touch with United Aircraft and the Bristol Aeroplane Co.

At present there are only two air-

lines in Europe operating helicopters—British European Airways and Sabena. Both fly helicopter mail services, with the primary purpose of gaining rotorcraft operating experience.

Iberia Begins DC-4 Service to Africa

Iberia has opened a fortnightly Douglas DC-4 service from Madrid to West Africa, the Spanish flag carriers' first operation to this area (it has, however, operated local services in Spanish Guinea for many years). Hitherto the route has been left in the hands of Aviaçion y Comercio, Spain's independent airline which recently bought two four-engine Languedocs from Air France for this operation.

The West African route is the first of a series of new services which will take the Spanish flag to the United States, the Middle East, and the Far East. Iberia's order for three Lockheed L-1049E Super Constellations may be preliminary to the placing of additional

contracts for new equipment. The airline is in need of medium transports for international routes in Europe, where pressurized aircraft are fast becoming a competitive necessity.

LAN Wants Four-Engine Craft for New Routes

Linea Aerea Nacional (LAN), Chilean flag carrier, plans to start operations to the west coast of the United States and to Europe as soon as it gets four-engine equipment.

The Chilean government has agreed to grant the company an annual subsidy equivalent to \$3,000,000 to help finance LAN's re-equipment program and improve airports in the south of the country. No decision on whether Lockheed Super Constellations or Douglas DC-7's will be ordered is expected until after the forthcoming elections in Chile, but it is known that three aircraft will be bought.

Qantas' Perth Route May Set New Trend

Airlines serving Australia from Asia are expected to watch with great interest Qantas Empire Airways' operations through Guildford airport, Perth, on its new service across the Indian Ocean to South Africa. There has long been a move to substitute Perth for Darwin as the country's airport of entry from the west.

Although longer, the Perth routing offers the advantageous possibilities of bringing international service to the important traffic centers of Perth and Melbourne (and possibly to Adelaide and Canberra). At present, international carriers fly non-stop from Darwin to Sydney, where passengers have to transfer to domestic services to reach other Australian cities.

REAL to Buy 340's

One of Brazil's smaller airlines, REAL, has decided to sell its four Curtiss C-46's and buy a fleet of Convair 340's. Two C-46's have been sold to another Brazilian carrier, VARIG, and a third has been sold in the United States to provide funds for a down payment on the Convairs.

BOAC's Comet III Plans

British Overseas Airways Corporation plans to use the de Havilland Comet III (reportedly a 140,000-pound plane) to operate two round-the-world services: one via Canada, Japan, India, and the Middle East; the other via the United States, Australia, India, and the Middle East. The BOAC program calls for parallel coach operations with turbo-prop Bristol Britannia transports.

Swiss Order U.S. Craft

The Swiss Army Air Corps has ordered two Hiller UH-12-B helicopters and two Piper Super Cubs "for study and test purposes." The Swiss have long been dicker with the idea of buying rotorcraft for rescue operations but hesitated before making any firm commitments: Switzerland's mountainous terrain requires a helicopter with good altitude performance. The UH-12-B's will be shipped by air to Zurich.

Haneda Airport Renamed

Japan's Haneda Airport has been renamed Tokyo International Airport following its return to the Japanese Government by the U. S. Air Force, which had been operating the field since V-J-Day.

So far, the airport is used by 10 foreign airlines and one Japanese. Facilities include main runways over 7,000 feet long, auxiliary runways 5,200 feet long, and a complete GCA landing system.



TEMPELHOF AIRPORT, Berlin, shows monument commemorating the airlift.

More Activity Seen for Berlin Airport

Although built well before World War II, Berlin's Tempelhof airport is rated by many as Europe's most impressive airport. A continuous flow of commercial transports, mainly Douglas DC-3's and DC-4's, maintain communications between Berlin and the West. In addition to these planes (operated by Air France, British European Airways, and Pan American World Airways) there is a considerable quantity of MATS traffic, a reminder that the air lift was really never completely phased out.

Since Tempelhof was returned to German administration on July 9, 1951, there has been a steady increase in traffic. Latest figures, for June 1952, show that the field handled 1,970 scheduled commercial transport movements;

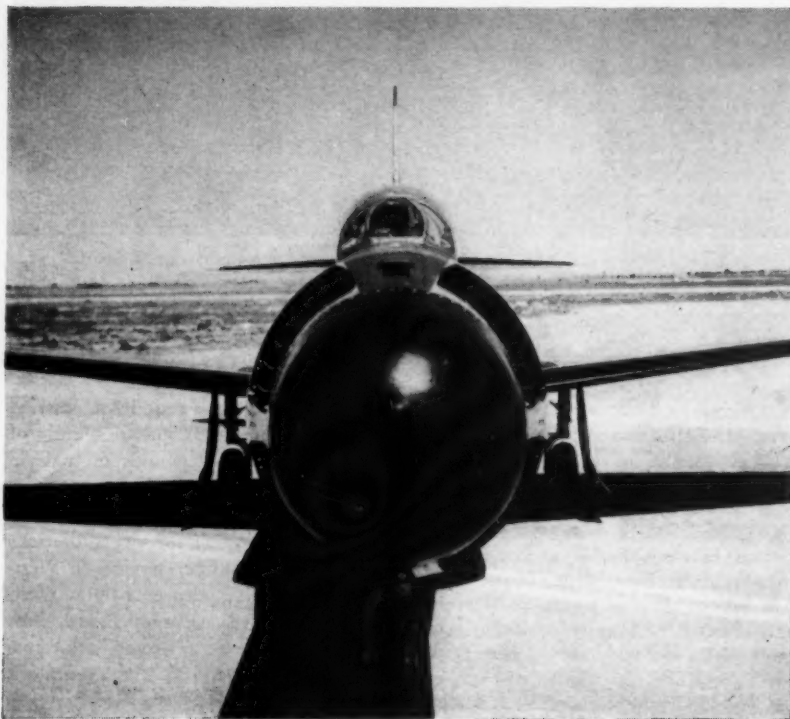
Air France, DEA and PAA carried 39,280 passengers, 5,050,000 pounds of freight and 350,000 pounds of mail in and out of Berlin.

Movements through Berlin will increase if a project of the city authorities for low-fare commuter services to Western Germany is approved by the Western Allied Civil Aviation Board. The West Berlin government has been negotiating with several foreign operators, including Britain's Silver City Airways, for a service between Berlin and Hanover with a one-way fare of 50 marks (\$12) against the present rate of 68 marks (\$16.25) charged by BEA. The Berlin authorities are also anxious to see all fares to Berlin reduced in order to bring more visitors to the ex-capital.



Comet flight simulator will soon be put into use by BOAC to train Comet crews. It will be built by Redifon Ltd., the British company which recently received a \$3,000,000 contract to build F-86 Sabre simulators for the Royal Canadian Air Force. Use of the Comet simulators will enable most of the jet transports to be switched from training duties to scheduled service—every Comet taken off scheduled service for training purposes can mean a loss of 18,000 revenue passenger-miles. Estimated operating cost of the simulator will be the equivalent of \$110 per hour, against \$900 for a Comet aircraft.

Production Spotlight



Nose-mounted rockets of the Lockheed F-94C are shown in this hitherto unpublished photo, as is the razor-like thinness of the wing. The 24 rockets are the plane's only armament.

New Defense Directive Due on September 8

Procurement of aircraft or related items will remain unchanged by a directive due to be issued by Defense Secretary Lovett on September 8 relating to armed services procurement. There is, however, the possibility that such aircraft changes will be made later as a general review of defense procurement gets into gear.

The September 8 directive will cover procurement, warehousing, distribution, etc., and will set up single purchase agencies for specific items. These items will be of general nature, such as office equipment.

No New Takers for Rapid Write-Offs

Requests from four airlines for rapid write-off certificates on 108 air-

craft are pending with DPA, but no new requests have been received since the certificate-of-necessity program was revived on August 5, according to the agency's Office of Resources Expansion.

Capital, Chicago & Southern, National, and American have requested approval of the 108 write-offs, which would include planes valued at \$101,000,000. In addition to these 108 and those previously approved, there are still 278 planes eligible for write-offs, since an interim goal of 600 commercial planes by the end of 1954 has been established.

Steel Strike Delays Pratt & Whitney Delivery

Delivery delays are predicted for the Pratt & Whitney Aircraft Division of United Aircraft Corp. as a result of the recent steel strike. In a six-month financial statement, the company revealed

that P&W is operating parts of its plant on a reduced work week, and stated, "It seems apparent now that scheduled shipments will be reduced, perhaps to a substantial extent."

The backlog for United Aircraft stood at \$1,310,000,000 on June 30, a drop of \$30,000,000 from the March 31 figure.

Convair Engineering Employs on 40 Hours

Engineering employees at Convair's Fort Worth plant, some 1,600 of them, have been put on a 40-hour week, a reduction of five hours per week from their previous schedule. Convair has announced that it does not expect any layoffs, but indicated that workers leaving their jobs would not be replaced. The Fort Worth payroll now numbers 26,000, down 5,000 from last winter's total.

C-119H Phase II Ends

Fairchild's C-119H has successfully completed Phase II of its flight test program. The prototype of the new model of the USAF troop-carrying packet during its Phase II test was put through maneuvers by an Air Force evaluation team from Edwards AFB, Calif. Phase I had been handled by Fairchild Aircraft Division test crews.

O'Konski Launches New Blast Aimed at Kaiser

New criticisms of Henry J. Kaiser have been launched by Rep. Alvin E. O'Konski (R., Wis.) with the insertion in the *Congressional Record* of a six-page blast at Kaiser's manufacturing activities and Government contracts.

O'Konski asserted that Kaiser's 85-page refutation of similar charges made earlier by O'Konski "fails entirely to point out one significant instance in which I have stated something for a fact which is not a fact."

O'Konski called for an investigation of the RFC, using Kaiser as a starting point and urged that the Special Procurement Subcommittee of the House Armed Services Committee redouble its efforts in investigating Kaiser's government contracts.

Labor Turnover Rates Per 100 Workers Aircraft and Parts Industries 1951-1952*

1951	Total Turnover	Quits	Dis- charges	Layoffs	Military & Misc.	Net Decrease
January	3.8	2.5	.4	.1	.8	10.5
February	3.6	2.5	.4	.1	.6	8.4
March	4.7	3.5	.4	.1	.7	8.4
April	4.5	3.4	.4	Less than .1	.7	7.6
May	4.6	3.6	.4	.1	.5	7.7
June	4.0	3.2	.4	Less than .1	.4	10.2
July	4.0	3.0	.4	Less than .1	.6	7.8
August	5.1	3.9	.5	.1	.6	7.3
September	5.1	4.2	.4	.1	.4	7.4
October	4.2	3.2	.4	.1	.5	7.6
November	3.6	2.7	.4	Less than .1	.5	6.7
December ...	2.8	2.0	.3	.1	.4	5.2
1952						
January	3.4	2.5	.4	.2	.3	6.6
February	4.0	2.8	.4	.5	.3	5.2
March	3.7	2.8	.4	.2	.3	4.8
April	4.0	3.1	.4	.2	.3	5.3
May	4.0	3.2	.4	.2	.2	5.4
June	4.2	3.2	.4	Less than .1	.6	6.1

*Source: Bureau of Labor Statistics

• **Cost of man-hours** in recruiting and selecting a new worker, including overhead, overtime, and spoiled work resulting from the job vacancy in the first place.

• **Lost productivity** while the new man is learning his job.

• **Accidents** resulting from inexperience, especially extra waste and spoilage of material.

• **Training** of the new man. This includes the time the foreman and his fellow employees devote to showing him the ropes.

• **Higher unemployment compensation** taxes and possibly higher insurance costs.

• **Possible failure** to meet delivery dates and possible shipment of defective lots to a good customer.

Perry says estimates vary from industry to industry and from a low of \$200 to a high of \$2,000 for every employee who changes his job, and maintains that his use of \$1,000 is conservative. "But even if the aircraft industry loses only \$500 every time an employee leaves, it is still costing it \$150 million," he adds.

Can aircraft and parts firms do anything to reduce the money lost through turnover? There is little doubt that the industry, beset by low profit margins, would welcome any additional revenue.

Almost Impossible

The other half of the consultant team, Robert Ware Straus, is convinced that aircraft and parts companies can cut down on labor turnover and thus hold on to some of the millions being lost, although he is quick to admit that the ideal of no turnover except for retiring employees is almost impossible of attainment. Straus suggests eight steps aircraft personnel men can take to reduce resignations and firings:

• **Selecting new men** should involve checking whether prospective workers have the experience they claim, whether they have adequate housing, whether they are physically able to handle the work required (usually through a medical exam), explaining fully the type of work they will be asked to do (to prevent early quits), and explaining the wage scale.

• **Placement of the individual** in the right job may require aptitude tests to keep him from being the proverbial square peg in the round hole. Very often the misplaced employee may work out very well in a different job, thus eliminating a resignation or a firing.

• **Adequate orientation** when the new man goes on the payroll, especially the basic facts about the company and

Industry Suffers 50% Labor Turnover

Aircraft and parts manufacturers lose about \$300 million each year, management consultants estimate.

By ROBERT M. LOEBELSON

IN THESE DAYS of labor shortages in the aircraft industry, most industrial relations men realize that their firms are losing money as a result of labor turnover. The over-all picture, however, may be much bleaker than any of them realize. A team of management consultants in Washington, D. C., believes that the aircraft and parts industry is spending at least \$300 million a year as a result of employee quits, discharges, layoffs, retirements, and entries into military service.

High of 5.1%

The firm is Straus and Perry. John Perry, one of the two partners, points out that in 1951 the aircraft and parts industry had a turnover rate ranging from a high of 5.1% in August to a low of 2.8% in December. For the entire year, however, the industry had a total turnover of exactly 50%, with 37.7% of it resulting from resignations.

Perry uses the relatively conservative employment figure of 600,000 for the industry, at the same time pointing out that at least 750,000 are expected to be on aircraft payrolls by the end of 1952. But the 50% annual turnover rate when combined with the 600,000 figure for aircraft employment means that

about 300,000 aircraft and parts workers left their jobs for one reason or another in 1951. Many of these workers changed jobs more than once so that fewer than 300,000 people were actually involved.

Perry believes that it costs the aircraft industry, which is now in a state of expansion, at least \$1,000 every time a worker leaves and has to be replaced. Multiplying the 300,000 who changed jobs last year by the \$1,000-per-worker figure, Perry arrives at the \$300-million-a-year industry loss. He admits that many aircraft labor relations men will contend his \$1,000-per-man estimate is far too high, but he holds that that is only because their cost accounting methods are not up to date. Perry says the following factors must be considered in job turnover:



Straus



Perry



(His business paper . . . of course)

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its products, the terms of employment (incentive plans, payroll deductions, group insurance, recreational facilities, parking lot, etc.), shop rules, the chain of command (to whom is his foreman responsible?), location of lockers, time clock, first aid room, and washroom. This may involve a man handling orientation, printed employe manuals, an orientation film, or a combination of all these.

• **Wage classifications**, advancement, and transfer should be adequate to keep production workers from being dissatisfied. It is also essential that higher pay jobs be filled by promotion from within if it is at all possible. Otherwise, workers feel that they are in dead-end jobs.

• **Working conditions** generally can still stand improvement. The best way to find out what conditions employes object to is to ask them, preferably through a mimeographed check list that they can answer anonymously. But management must take steps to correct these conditions, or else explain why. Employes will be more willing to live with a situation if they know attempts are being made to correct it.

• **Supervision**, being one of the major causes of quits, is also responsible for much poor work. Aircraft firms must make every attempt to get foremen who will be fair to all workers, whose discipline is constant, and who refuse to play favorites. Foremen must come up from among the production employes.

• **Adequate training**, even with new workers who have done similar work elsewhere, is a must, because each firm's methods are slightly different. In many cases a training director is advisable. Aircraft companies should learn whether local schools or colleges have any suitable foreman training courses.

• **Exit interviews** to ascertain why the worker decided to give up his job may be worthwhile, but only if the worker is accustomed to a free interchange of ideas with management. Otherwise, the employe will make up some plausible reason, usually that he will be getting more money elsewhere, to make certain he gets a satisfactory reference.

Obituary

RAYCROFT WALSH

Raycroft Walsh, 64, vice chairman of United Aircraft Corporation, died on August 17 at his home in Westerly, R. I.

Walsh, a pilot in World War I, joined UAC in 1930 as general manager of Hamilton Standard Propeller Division, a post he held until 1940. He was made a director and a vice president in 1936. He was advanced to senior vice president in 1942 and vice chairman in 1943. He also was a director of United Aircraft Export Corp.

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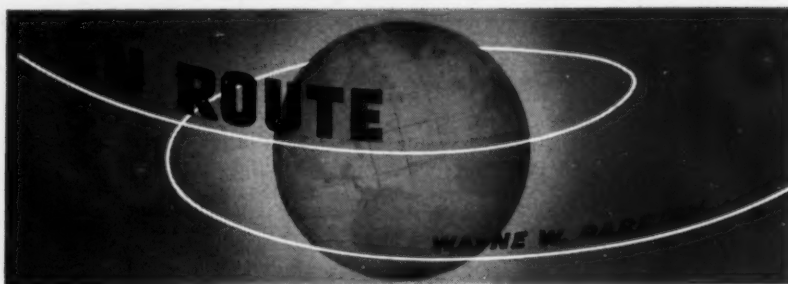
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Contrast. If what you're looking for on a vacation is scenery, the United States has just about every kind and plenty of it. But the motor trip through France which my wife and I took last May was in search of something different in the way of vacations. It was contrast we were after, I guess. At least we found relaxation and fun in the centuries-old land of France, with its old customs and charming people.

Here are some random impressions from my notebook and my memory:

- Remember the village blacksmith and the metallic sound of hammering on the anvil? The blacksmith has all but disappeared from the U. S. scene. But in France there are a great many—at least one in almost every town and village. It's nostalgic to round a curve and dip into a tranquil old village and hear the sound of the anvil.

- Most of the French roads are lined with straight, even rows of trees. Especially beautiful are those miles of poplar trees. The French take excellent care of their roads, keeping the trees trimmed and the grass cut. Traffic is light except on a few main arterial highways. There are few fences to obscure or break up the view. Almost all the countryside is park-like, making driving a real pleasure. There are no advertising signs or billboards to clutter up the scenery, except immediately outside towns.

Bells for the Soul. I like to hear church bells in the countryside. You can't drive any distance in France without hearing bells tolling in the tower of some village church. In our noisy civilization we have forgotten the tonic which church bells can be to the soul, as the sound drifts across the fields on a lazy late afternoon.

- In the U. S. we get stopped so often by traffic lights or traffic jams. What a pleasant change to be stopped in a country road by a herd of sheep. This is a frequent occurrence in the Basque country in the foothills of the snow-capped Pyrenees. The tinkling of sheep and cows bells is music to the ears.

- France is a country of flowers. The fields of red poppies and other flowers of white, yellow, and purple, were a riot of color everywhere in May. And how sweet those fields of clover smelled!

- Power machinery is still scarce in France. Most farming is old-fashioned. The ox is still the main power unit and the farmers work from dawn to dusk. Women were doing the hardest type of labor in the fields. And have you ever seen a group of farm women dressed in black sowing the field by hand and

praying for a good harvest as they start down a new series of rows? There may be plenty of lazy French people in Paris, but I can swear that the French farmer and his family are among the most hardworking people in this world. They toil hard for their daily bread and very modest income.

Traveling Stores. You'll see, also, the traveling bread, meat, and grocery trucks as they move from farm to farm and village to village. Want some pork chops? The truck driver will cut them



Old cathedrals . . .

on the spot. The meat isn't covered and it's not refrigerated and wouldn't possibly meet our sanitation standards, but the French seem to like it. The bread wagon is also a sight. The French bread is about a yard long and nobody would think of wrapping it in paper. If it drops on the highway, nobody minds.

- Music plays a big role in French life. Not the tinny jukebox trash which crashes into our ears in every cafe, but really good music that stands the test of ages. When we reached Chartres Cathedral a wedding was just finishing and the organist was going all out with the great organ in that massive and fantastically beautiful structure. He who hasn't felt a tingle down his back at the powerful outpouring of a great organ in a big cathedral has missed a lot.

Saturday Night. It was Saturday night in a little town in the Basque country in the Pyrenees. After a fine dinner my wife and I took a walk and watched the rushing icy water of several streams from the mountains. The moon was full. It was almost two months to the day since I had seen that same full moon reflected in the Orinoco River in southeastern Venezuela in South America. What a change of surroundings.

- As we neared an old church I heard music and we slipped in the open side door. The only light was in the choir loft and the local mixed choir was practicing for the next day's service. We sat on some stone steps in the dark for a long time listening to the very wonderful music. The voices were excellent and the organ superb. At intervals the choir-master would rap and spout his displeasure in French and the choir would start over. Evenings like that are to be remembered.

- In a country which lacks the diversions we have at home, the traveling carnival is a great event. One evening in a small town we were having dinner and heard some trumpets. Soon a parade passed the hotel, consisting of a dozen trumpeters and a flock of kids holding lighted lanterns. The waiter explained that a carnival was opening that night and it was customary to have a parade through the town to announce it. After dinner we sought out that carnival, which had about the same type of amusement concessions as carnivals in the U. S., and got a kick out of watching the local French have a great time.

Castles by the Gross. Castles? Loads of 'em. There was one area south of central France where we passed a castle every ten minutes. Each village had one. Some were in ruins, others are well maintained and being lived in. There was a photographer's dream at every turn of the road. We passed so many castles that they became uneventful.

- If you like something old and spectacular, let me recommend Rocamadour, a little town off the main road in south central France. Many centuries ago a shrine was begun here and the town has been built on the side of a sheer cliff. A church is on top and the pilgrims climb up by one route or another. A restaurant is half way up the



. . . and little cafés.

side and we had lunch on a terrace overlooking the canyon. It is truly one of the amazing sights of France and one wonders how the town manages to cling so permanently to the side of the sharp 800-foot cliff.

- And then there are the walks through old towns at dusk, the narrow cobblestone streets, the hidden, quiet little squares, the tiny cafes and bars, and the late shoppers buying bread, meat, and groceries just before the shops close for the night. I kinda like it. I think you would, too.

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SEPTEMBER 1, 1952



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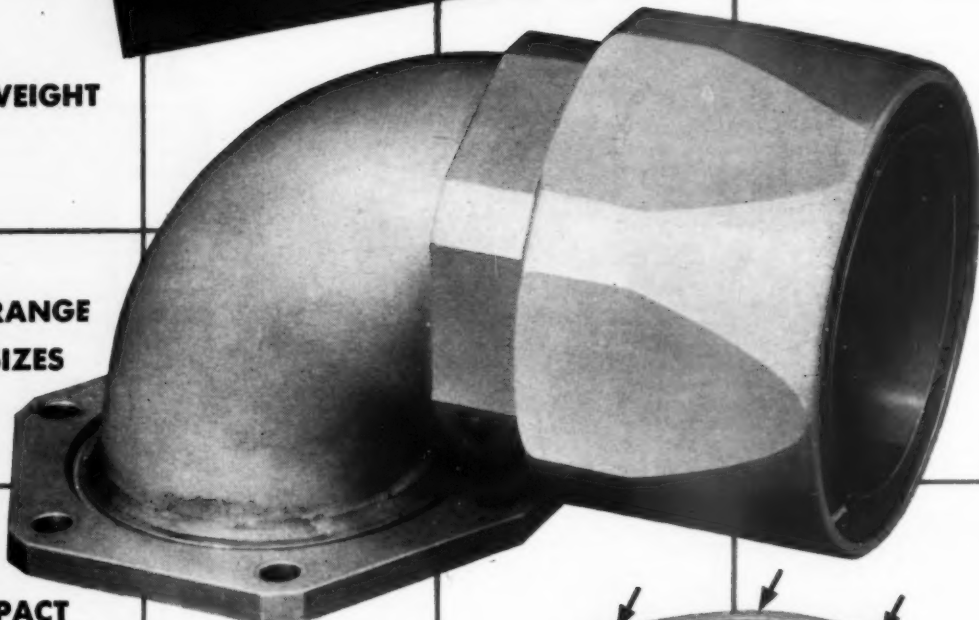
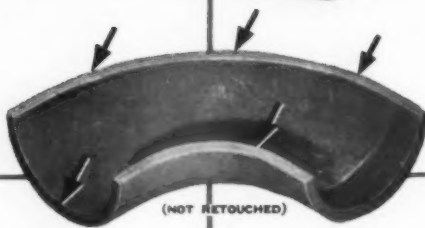
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News At Deadline

New Turboprops To Power Jet Bombers

New, higher powered turboprop engines will appear in the near future and make possible experimental turboprop version of the Convair YB-60 and the Boeing B-47. The possibility, although not yet firm, is under active consideration.

Existing turboprops (such as the Allison T-38 and T-40 and the Pratt & Whitney T-34) are not powerful enough for such high-speed bombers, but the newer engines now under development will overcome this objection.

More Connies For TCA

Three new Super Constellations have been ordered by Trans-Canada Air Lines at \$1,600,000 each plus spares. The order brings to a total of eight the number of Super Connies ordered by TCA, with deliveries scheduled to start in late '53.

The Canadian carrier may use the aircraft to carry as many as 89 passengers non-stop from Montreal to London in 10½ hours. All eight planes will take off at 133,000 pounds and cruise at 340 mph.

El Al Buys Used Connie

Purchase of a Lockheed L-49 Constellation in the used aircraft market has been announced by El Al Israel Airlines. The aircraft will supplement the carrier's three early-model Connies. El Al hopes to use the L-49 in the trans-Atlantic tourist service as part of a three-flights-weekly schedule.

Engine Cooling Grounds Piasecki Helicopters

Engine cooling system trouble grounded the Navy's 6-place Piasecki HUP helicopters several weeks ago, it has been learned. Ten of the planes, scheduled to participate in the Navy's OPERATION MAIN BRACE in Northern European waters, were rushed through modification at the Naval Air Station at Lakehurst, New Jersey, to meet an August 26 deadline.

Other HUP's are being modified at Key West, Florida, while changes in the cooling system are being incorporated in aircraft still on the Piasecki production line.

LAA Buys 3 More S-55's

Three additional Sikorsky S-55 helicopters have been ordered by Los Angeles Airways for delivery in 1953, while a fourth S-55 on order has not yet received DPB approval for construction.

The LAA fleet will total eight helicopters when the latest three are delivered; of these, five will be S-55's and the remainder S-51's. Spare parts orders for the S-55's amount to \$100,000, according to Clarence Belinn, president of LAA.

NYA Orders Three S-55's

Helicopter mail service is due to begin this fall between New York's three major airports, soon after New York Airways receives its first Sikorsky S-55 in October.

NYA has announced that it has three of the 10-place helicopters on order, at \$150,000 each. Passenger service will be instituted after sufficient experience has been built up on mail and cargo flights.

TWA Mail Pay Petition Dismissed as Too Late

Dismissal by CAB of TWA's petition for restoration of half of a \$6 million trans-Atlantic mail pay cut has been described as disappointing by TWA's board chairman Warren Lee Pierson. Late filing was cited by CAB as reason for the dismissal.

The cut was made on the grounds that TWA has been overpaid for trans-Atlantic service, although the subsidy separation report for international carriers issued last month by CAB indicated that TWA's current mail compensation of about \$3.3 million is less than compensatory rates alone would return.

Behncke Leaves ALPA Hq After Contempt Action

The see-saw battle for the presidency of the Air Line Pilots Association-AFL was advanced two stages further when David L. Behncke was ruled in contempt of a Federal Court order staying his reinstatement as ALPA president. Main basis of the contempt citation was Behncke's continued occupancy of the ALPA headquarters building. At present time Behncke was reported moving out, presumably in an attempt to purge himself of the content.

The stay of his reinstatement had been granted pending action on an appeal filed by the anti-Behncke faction. Hearing on this appeal has been set for September 29.

American Airlines, meanwhile, has denied Behncke's claim that it is helping to prosecute the fight against him by offering the use of its attorneys to the Clarence L. Sayen faction. "The company has taken no part," announced an AA spokesman, "in the litigation and is involved in no way; to do this would be in direct violation of the terms of the Railway Labor Act."

First Viscount Flies

The first production model of the turboprop Vickers Viscount 701 has made its maiden flight. Scheduled to be delivered early in October, the plane is the first of 26 ordered by British European Airways.

Both C-46 Elevators Found Disconnected

The elevators of R. Paul Weesner's Curtiss C-46 which crashed at Miami International Airport early in August were found completely disconnected, according to CAB agent John Runger at a CAB hearing in Miami. Part of the connection, a cotter pin which should have held a nut in place, could not be found, although other parts of the connection were located.

Further testimony revealed that a nut at another elevator location was found "finger loose" and lacked six threads of being properly tightened. An entry in the plane's log book noted "excessive play in ele.," indicating that the pilot, Robert E. Smith, president of All-American Airways (the non-scheduled airline), had experienced trouble with the elevators before the accident.

Military Orders Five Ram-Jet HJ-1 'Copters

An order for five Hiller Hornet (HJ-1) ram-jet helicopters has been received by Hiller Helicopters. The aircraft will be used in evaluation tests by the Army, Navy, and Marine Corps.

Deliveries are scheduled for June, 1953, on the two-place ships, each of which is powered by 12-pound jet engines mounted on the tips of the two 23-foot rotor blades. Production will be in the Hiller plant at Palo Alto, California.

Civil Plane Shipment Dollar Value Up 100%

United States manufacturers shipped 100% more civilian aircraft, dollar-wise, in the first six months of 1952 than they had during the similar period in 1951. This year's total was \$95,800,000 as against \$44,052,000 for last year, according to a joint CAA-Bureau of Census report.

Number of aircraft shipped rose some 12%: 1,655 aircraft this year, as contrasted with 1,477 planes in last year's first half. Airframe weight of 4,638,400 pounds was 71% over last year's figure of 2,708,600 pounds.

Engine shipments during the first six months came to 2,604, with a total of 1,619,600 horsepower and a value of \$22,277,000. Last year's shipments during the same period had come to 2,311 engines, 1,121,400 horsepower, and \$13,938,000.

Pseudonyms Out After Sept. 23, CAB Rules

Air carriers, air taxis, and freight forwarders who have found their licensed firm names too prosaic to do business under and who have confused the public with a variety of pseudonyms will have to give up the practice. New CAB regulations requiring that such firms do business under their licensed names are effective September 23, and will become applicable November 15.

The grace period is designed to allow time for firms to request permission from the Board to use some other name if they have already built up good will in it. Minor variations from the official name are also allowable if such variants are readily identifiable with their source.

Northwest Tests TCP In Fleetwide Fuel

Northwest Airlines today becomes the first airline to use Shell TCP (tricresyl phosphate) as an aviation fuel additive to neutralize engine lead deposits on a fleetwide basis, announcing its use in ten Boeing 377 aircraft.

Arrangements have been made by Northwest with the Shell Oil Company to supply special 100/130 and 108/135 octane gasoline containing TCP at fueling stops along all its domestic and foreign routes.

Northwest estimates that the use of TCP will increase spark plug life 50% to 90% and will lengthen engine life considerably.

AA Sets Freight Record

American Airlines' DC-6B's are setting new air freight records for that carrier, using the extra forward compartment for cargo rather than passengers. In July American loaded 700,382 pounds of eastbound air freight at Los Angeles, passing the 700,000-pound mark for the second time. Approximately 70% of the freight, according to Frank Berg, Los Angeles sales manager, was carried in passenger planes. The DC-6B can carry about 8,000 pounds of cargo in American's configuration.

Trans Caribbean Bid On Colonial Merger

One of the merger offers received by Colonial Airlines recently in answer to its request for bids came from O. Roy Chalk, president of Trans Caribbean Airways, a large irregular carrier. Since Colonial did not consider that the offer conformed with its solicitation, it was not made public.

Chalk's offer involved his purchase of a large block of an extra issue of stock, and continued operation of Colonial under its own name.

Indo-Chinese Carrier Buys Four SO 30's

Four SO 30 Bretagne's have been ordered from SNCA du Sud-Ouest by the Indo Chinese carrier Societe de Transports Aeriens d'Extreme-Orient (STAEO). The first two twin-engined transports, equipped as 43-seat coaches, were recently delivered. The carrier is currently operating Douglas DC-3's.

DH 110 Is Supersonic

The de Havilland DH 110 all-weather fighter, scheduled to make its first public appearance at the Farnsworth show, is in the supersonic class, it has been revealed. The 2-place plane flew faster than sound on April 9, and on "very many" occasions since, according to the manufacturers. Power plant is 2 Rolls-Royce Avon gas turbines.

Cross-Wind Gear Corporation Formed

A new corporation, Geiss Gears, Inc., is being formed in St. Louis to develop, manufacture, and market all patents, including the cross-wind gear, of inventor John H. Geiss.

Initially the cross-wind gear for Cessna 120's, 140's, and 170's, which are CAA-approved, will be manufactured. Gears for Cessna 190 and 195 models are being developed and will be manufactured next. Cross-wind gear for other aircraft will be designed, approved, and manufactured as quickly as possible.

The firm consists of a partnership between James L. Robertson, director of Robertson Aircraft Corp., and Joseph Desloge, Jr., president of the St. Louis Machine Corp. The latter firm will manufacture the gear and the Robertson Aircraft Development Corp. will market it. Deliveries are scheduled to begin in September.

Caribair Recommended For Five-Year Renewal

A five-year renewal of certificate has been recommended for Caribbean Atlantic Airlines by CAB Chief Examiner Francis W. Brown. Caribair operates from San Juan, P.R., to Ciudad Trujillo, D.R. Brown termed the carrier's history of performance "excellent" and urged consideration of an extension of Caribair's service to other islands in the area, as well as suspension of Chicago & Southern's authorization east of Jamaica.

Schools Pick Piper to Build Training Planes


Piper Aircraft Corporation has been recommended to receive the contract for building the 243 lightplanes needed for use by the nine civilian training schools holding Air Force flight training contracts. Sam Solomon of California Eastern Airways, who was placed in charge of the bids for the Air Force, stated that Piper met all specification requirements with the one exception of delivery dates. Piper's bid stipulates delivery of 160 planes by February 1, whereas the Air Force wanted full delivery by that date. Piper stated that 60 more planes could be delivered during the month of February, with the balance in March.

Dassault MD 316 Flies

Maiden flight of the French twin-engine Dassault MD 316 took place recently. Accommodating 16 passengers and powered by two SNECMA 14 X Super Mars engines, the MD 316 is a civil version of the French Air Force's MD 315. Testing will be conducted on the Bordeaux-Bilboa route of Lignes Aeriennes Marcel Dassault.

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